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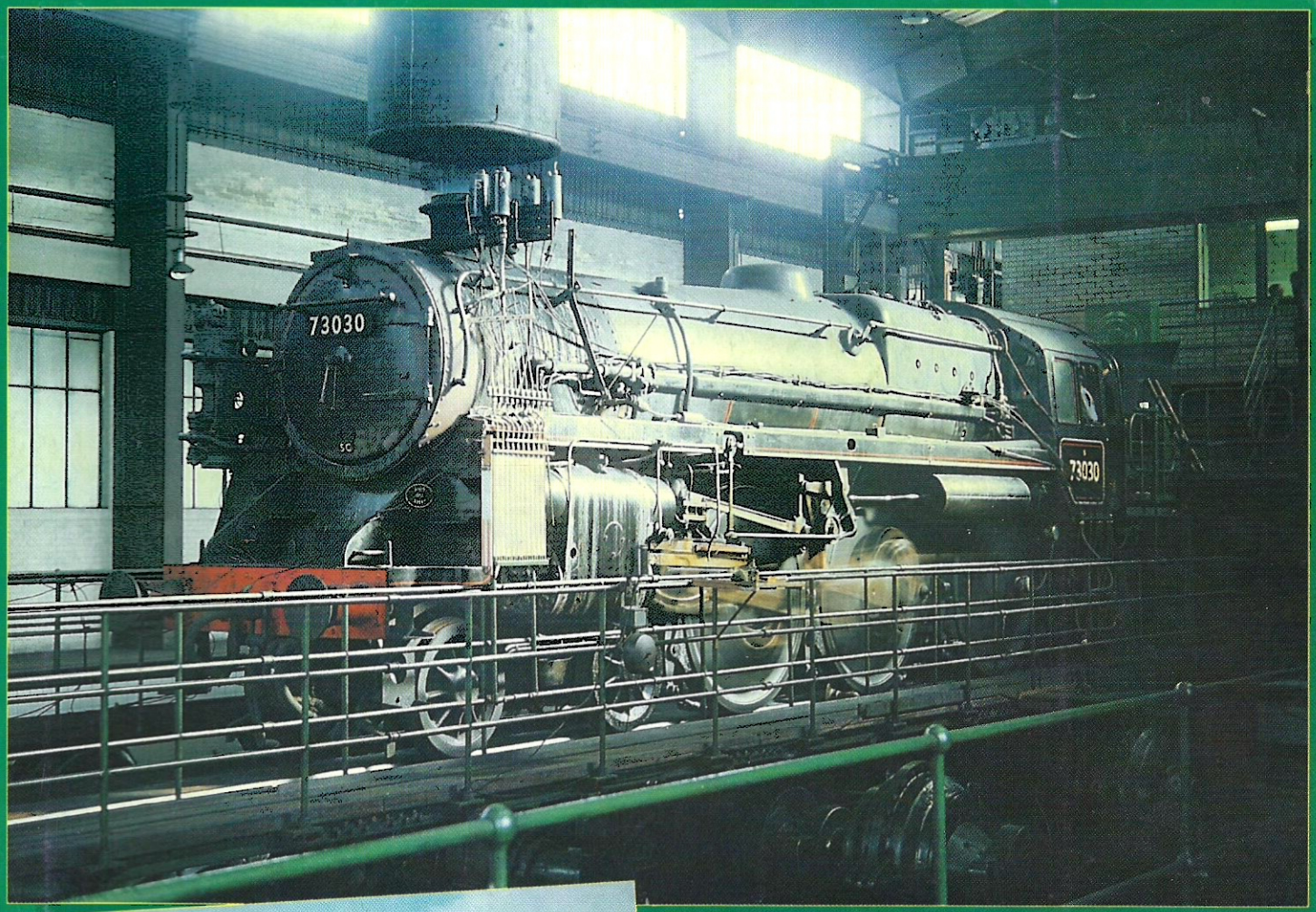
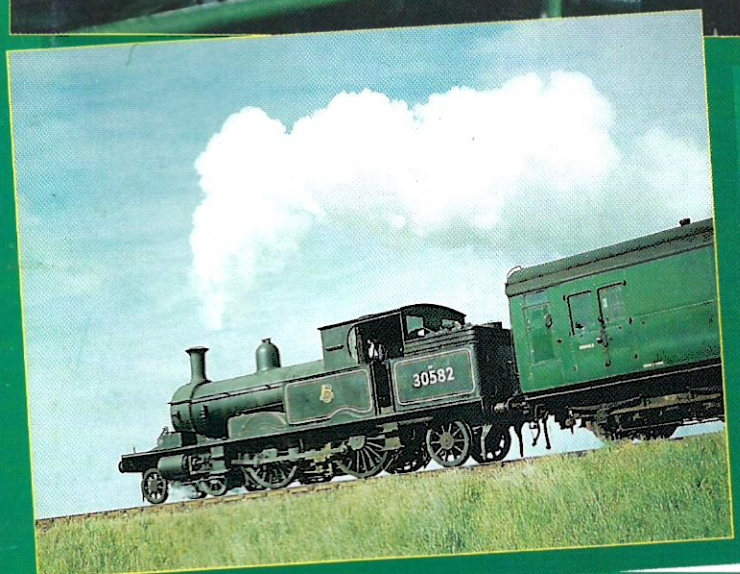
Back Track

RECORDING BRITAIN'S RAILWAY HISTORY





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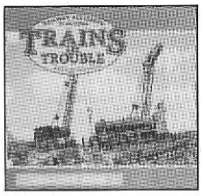

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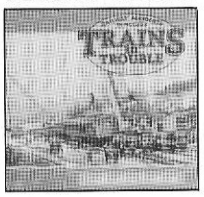

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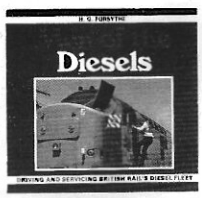

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BackTrack

RECORDING BRITAIN'S RAILWAY HISTORY

Vol. 3 No. 4 September-October 1989

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WHAT IS RAILWAY HISTORY?

We would like to draw your attention to the very interesting contributions to our current letters page from Messrs Howell and Griffiths, for they seem to come close to the heart of issues facing a journal such as BACKTRACK. They have given us much food for thought and have largely prompted this editorial.

Our mailbag usually contains a few letters chastising us either for being too technical or too trivial so we clearly cannot win(!), but we have wondered whether or not we should devote more space to explaining the basic aspects of railways, be they history, language or technology, which it is no longer safe to assume will be known by all. We do not want to insult our readers but neither do we wish to alienate the newer recruits to the subject by assuming too much. Before I became responsible for BACKTRACK, I was worried lest my 1988 articles on carriages should be seen as too simple, but my predecessor was reassuring and the feedback positive; so we would like to do more if the demand is there.

I make this point because there is, these days, a real danger of creating false history, ranging from 'heritage trails' to tacky 'theme parks'. However well-intentioned these ideas may be, and however much fun they may give to visitors, I cannot help but point out that few of them give much inkling of what the past was really like.

In railway terms, this means, for example, that we are concerned when items not even built when the old companies ceased to exist are offered as though they were, purely in pursuit of a sort of 'respectability by association'. To re-make the past by presenting history as sanitised and ill-researched nostalgia serves no useful purpose whatsoever. It is synthetic and false — and we are even more alarmed when 'establishment' bodies seem to wish to join in the same or similar pretence. To our minds, while it may promote tourism and revenue, it gives a very misleading impression of the real story.

This is why BACKTRACK generally avoids preservation. Of course, we admire the efforts of the preservation movement and we accept the need to make money and attract visitors. Moreover, we get as much fun out of watching preserved steam as anyone, but it is usually *only fun* (and none the worse for that) and not to be confused with the reality of the historic steam railway.

Thus, if a preserved tank engine is to be known as 'Thomas', we think it would be more honest to paint it blue with a funny face on the front! This would at least be in accord with sound private railway practice in terms of repainting a second hand engine. A fully lined red LMS 'Jinty' is fine provided it is not given genuine historic insignia, that is all we are saying — and we take exactly the same view about *Blue Peter* with LNER insignia, *Royal Scot* in LMS livery or *Clun Castle* in GWR markings.

As for BACKTRACK, all we can do is to record aspects of our railway history as accurately as we and our authors are able and offer the results honestly. We shall make mistakes, for it is hard enough to get the real facts right without modern day distortions causing problems. But we shall not make them on purpose, that is the real difference! We shall therefore continue, as best we can, to tell it 'as it was' rather than as some might have liked it to be!

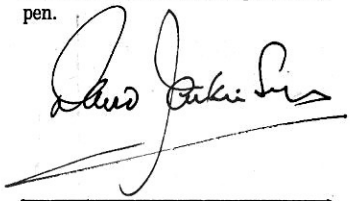
BACKTRACK COSTS

We don't like it but as already hinted, circumstances will soon force the price of BACKTRACK to £1.95. Like everyone, we have to meet normal inflation but our paper prices (representing 50% of our total costs) actually go up twice a year at a rate well above normal cost increases. However, we are not prepared to take the easy solution by lowering the quality, deserting our heavyweight art paper or abandoning 'high-tech' colour reproduction. Increasing the number of pages makes things even more expensive but some of you may have noted that by making slight design changes in this and the last issue we have managed to get some 10% more article material into the same page count. This, we think, is the best compromise.

Apart from a very modest rise last year, this is the first increase since our first issue in 1986 and the magazine will still be only 45p more than when launched over three years ago — a lower increase over the period than many contemporaries. We shall hold off the actual rise until Volume 4 No. 1 (due in late December) and you can even insure against part of this increase by taking out a subscription now which will bring you the next six issues at the current rate. Details are on page 191 but we can only hold this offer open until December.

RED FACES DEPARTMENT!

Our humble apologies are due to Bill Simpson for attributing his quite admirable article on Bletchley (Vol. 3 No. 3) to a totally fictitious Mr Bill Smith! We do not know quite how it happened but will make sure that there is no repetition when we publish future articles from Mr Simpson's able pen.



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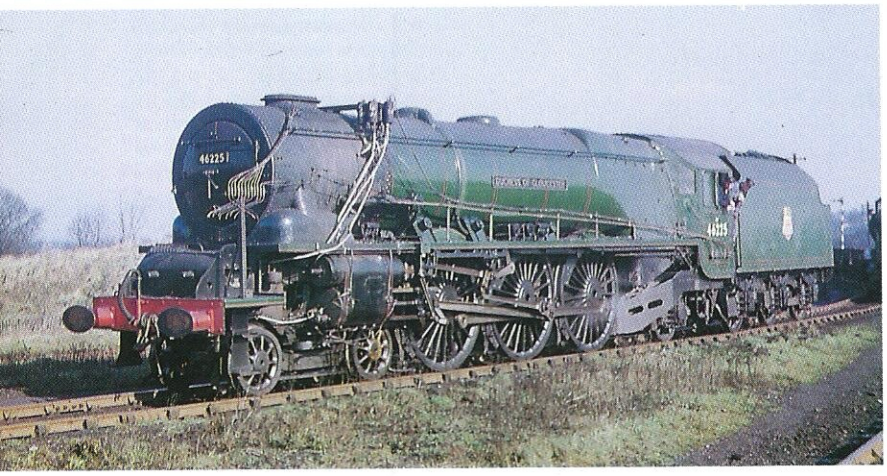
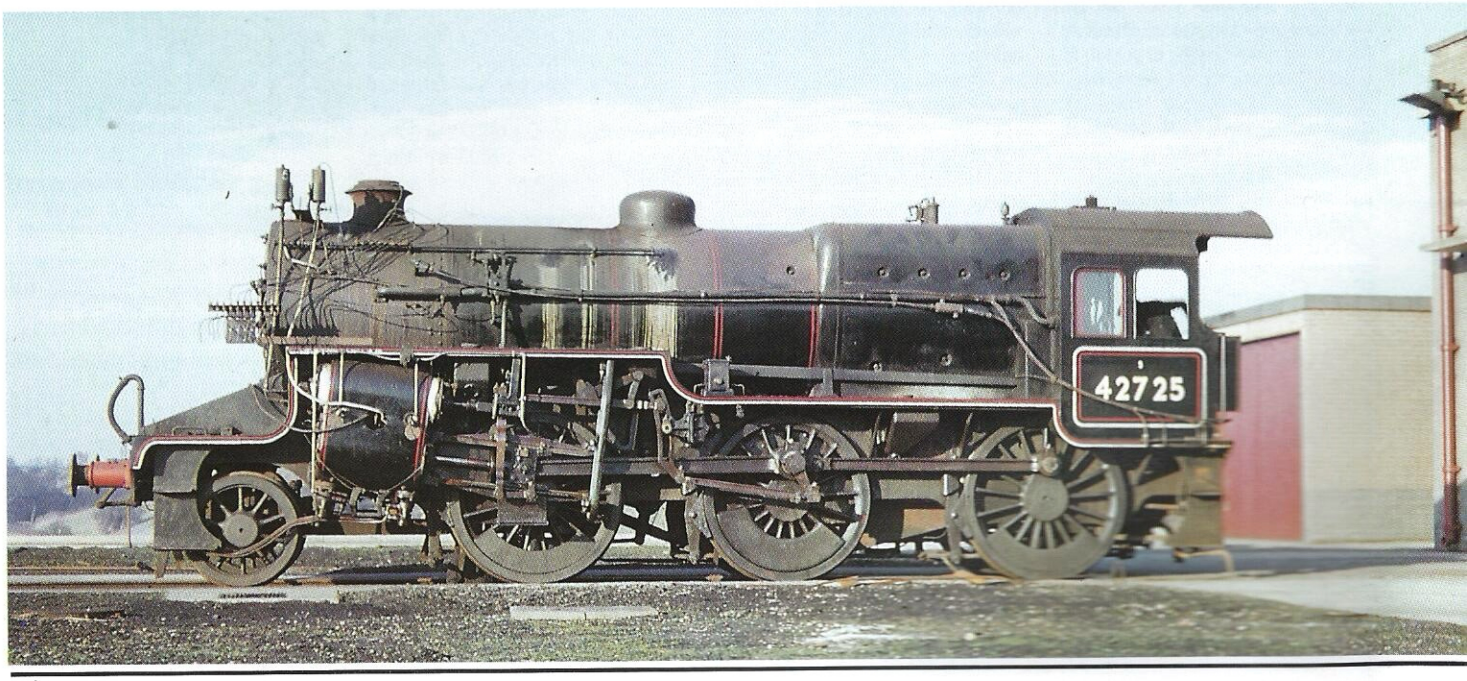
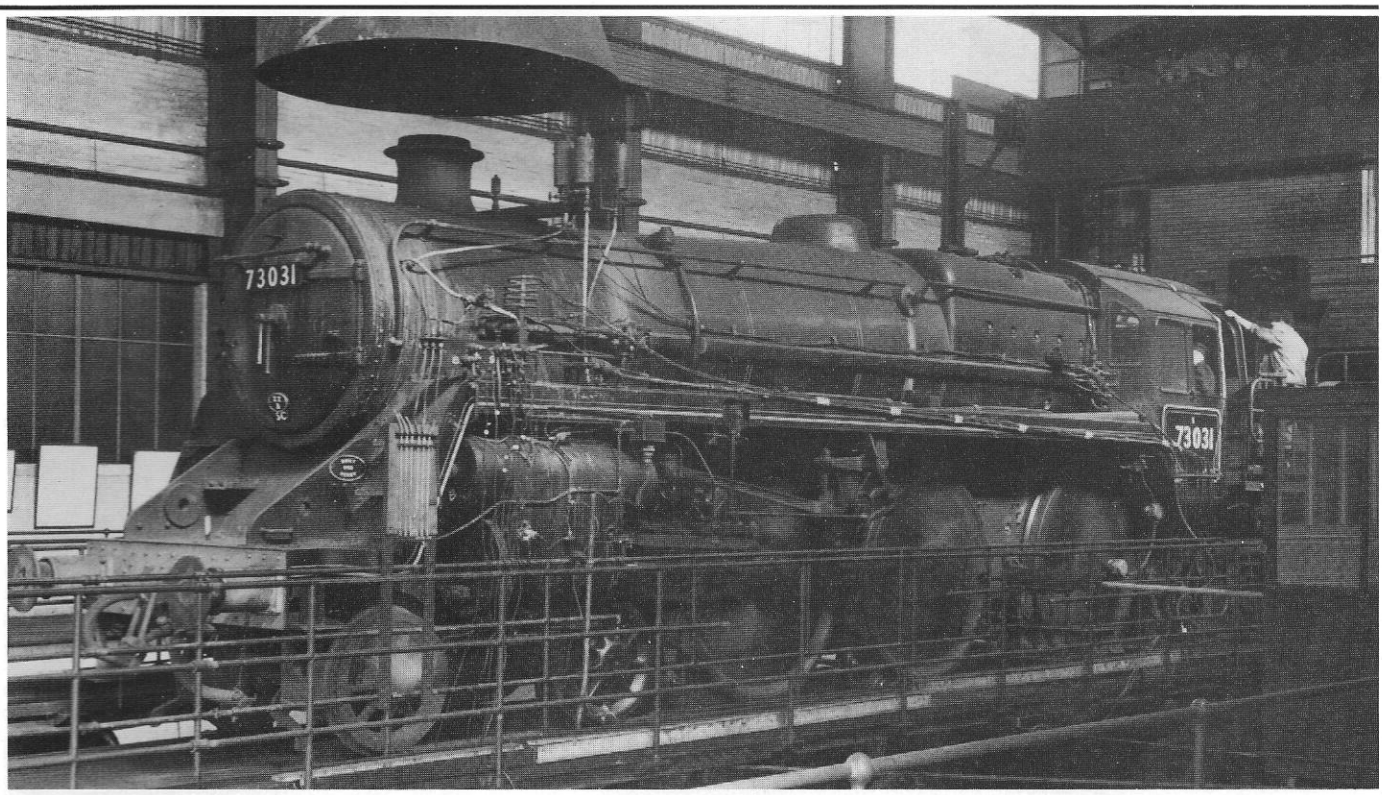


ON T

These rare colour views depict three of the many different testing occasions at the short-lived Rugby Testing Station. They show BR Class 9F 2-10-0 92013, ex-LMS Class 8P 4-6-2 46225 *Duchess of Gloucester* **and ex-LMS Class 6P5F 2-6-0 42725 respectively. Further details of the specific nature of these tests are given in the accompanying article and summary tables.**
Photos: J. G. Click collection, NRM





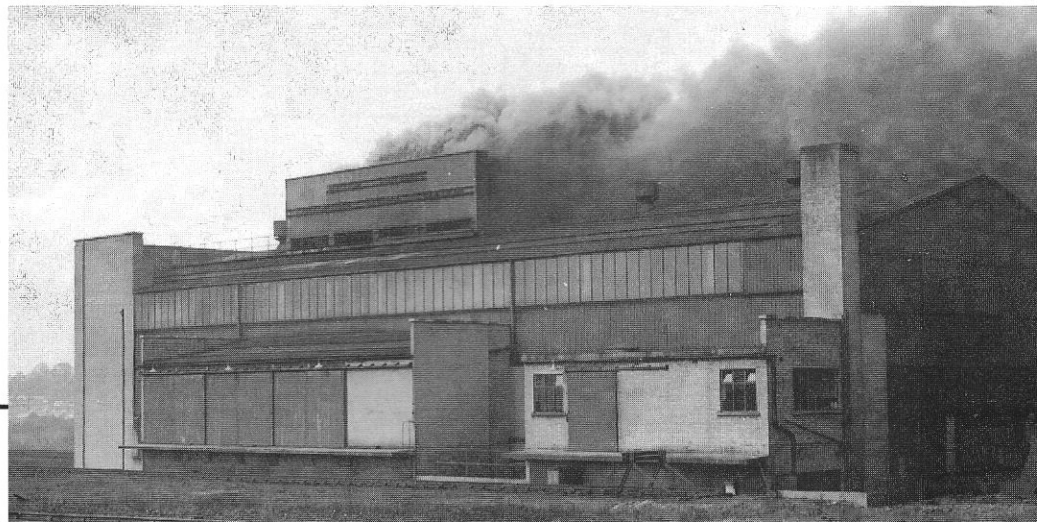
Standard Class 5 4-6-0 73031 with electrically supplemented superheat 'at speed' at Rugby in 1958. Note the large bell mouthed 'travelling chimney' installed in 1955 to accommodate the offset exhaust of the Franco Crosti 2-10-0 tested that year. J. G. Click Collection/NRM

EST: RUGBY LOCOMOTIVE TESTING STATION

In what we think is the first popular account of the subject, NRM Librarian **PHILIP ATKINS** *assesses the value of Britain's most sophisticated steam locomotive testing establishment.*

Despite the abundance of steam locomotives restored to main line running order, the sights and sounds of the steam era will assuredly never be repeated. Whereas the picking up of water at speed from troughs between the rails was an everyday sight in many parts of the country for about 60 years, the awesome spectacle of a locomotive working all out yet going nowhere was confined to a handful of technicians at the stationary testing stations at Swindon and Rugby.

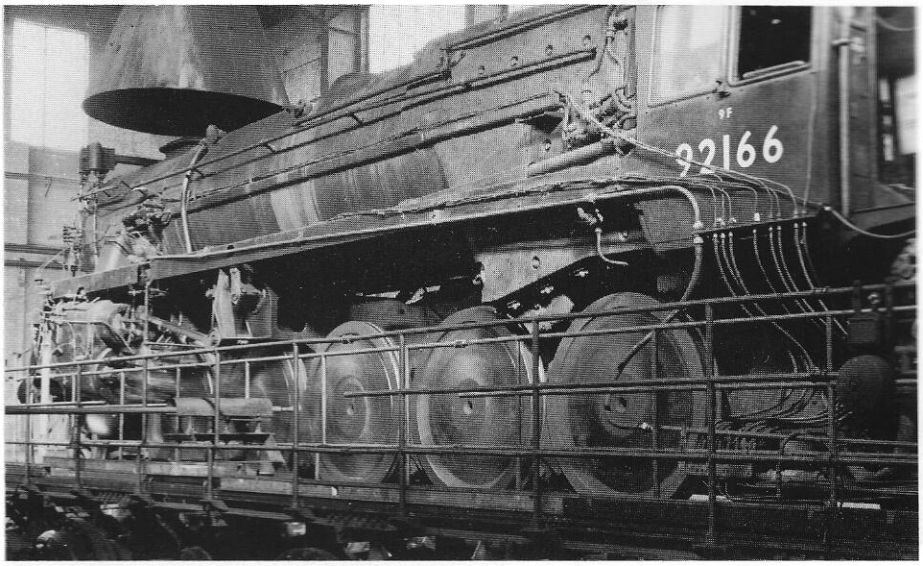
A scientific approach to locomotive testing was pioneered in Tsarist Russia in the 1880s, where the concept of testing a 'captive' or tethered locomotive evolved. This permitted an engine to be operated at a pre-determined constant level of output without the complications of hauling a train over variable gradients. The idea was taken up at Purdue University in the USA in 1891, with a small 4-4-0 running on rollers. The celebrated Pennsylvania Railroad test plant at Altoona was established there in 1905 and provided much valuable data which was widely disseminated. A test plant was set up by the GWR at Swindon a year earlier; but originally capable of absorbing up to 500 hp only it was actually used relatively little in its early years and only really came into its own after the second World War.



The exterior of Rugby Testing Station while SR 'Merchant Navy' 4-6-2 35022 was being tested in 1952. J. G. Click Collection/NRM

In April 1919, Edward Gass of the LYR suggested to the Institution of Locomotive Engineers that a locomotive testing station should be built in Manchester, which was a major locomotive building centre. Subsequently, Nigel Gresley, CME of the LNER, took the opportunity in his presidential addresses to the Locomotive Engineers, and Institution of Mechanical Engineers in 1927, 1931, *and* 1934 to make a strong case for a national locomotive testing station to serve both the railways and the private British locomotive industry. He was strongly backed by his then LMS opposite number, Sir Henry Fowler, and by February 1930 they had identified a potential site at Crossgates on the outskirts of Leeds, which was described in a 1931 Department of Science and Industrial Research report. Unfortunately by then the national economy had virtually collapsed, but Gresley's 1934 plea revitalised interest. He referred to a visit he had just made to the newly completed (1933) French national locomotive testing station at Vitry in Paris, which had been first proposed in 1920. Gresley pointed out that it had cost about £120,000 and that the British annual railway coal bill was £12 million. If such a plant enabled only a 1 per cent reduction to be made in fuel consumption, (or about ½ lb per mile) it would pay for itself within 12 months!

Serious discussions followed, including one in Gresley's office with his three fellow CMEs Stanier, Maunsell and Collett in July 1935. Collett of the GWR was lukewarm on the national project revealing that the Swindon plant had recently been uprated to absorb a still insufficient 2000 hp, and that although it did not have any regular staff attached to it, he said it was freely available for use by the other lines. The private locomotive industry expressed interest in principle, indicating that to be of use to them it would have to accommodate rail gauges ranging from 2 ft 6 in to 5 ft 6 in. However, ever since 1929 the various builders had had a very lean time and simply could not contribute the necessary finance.

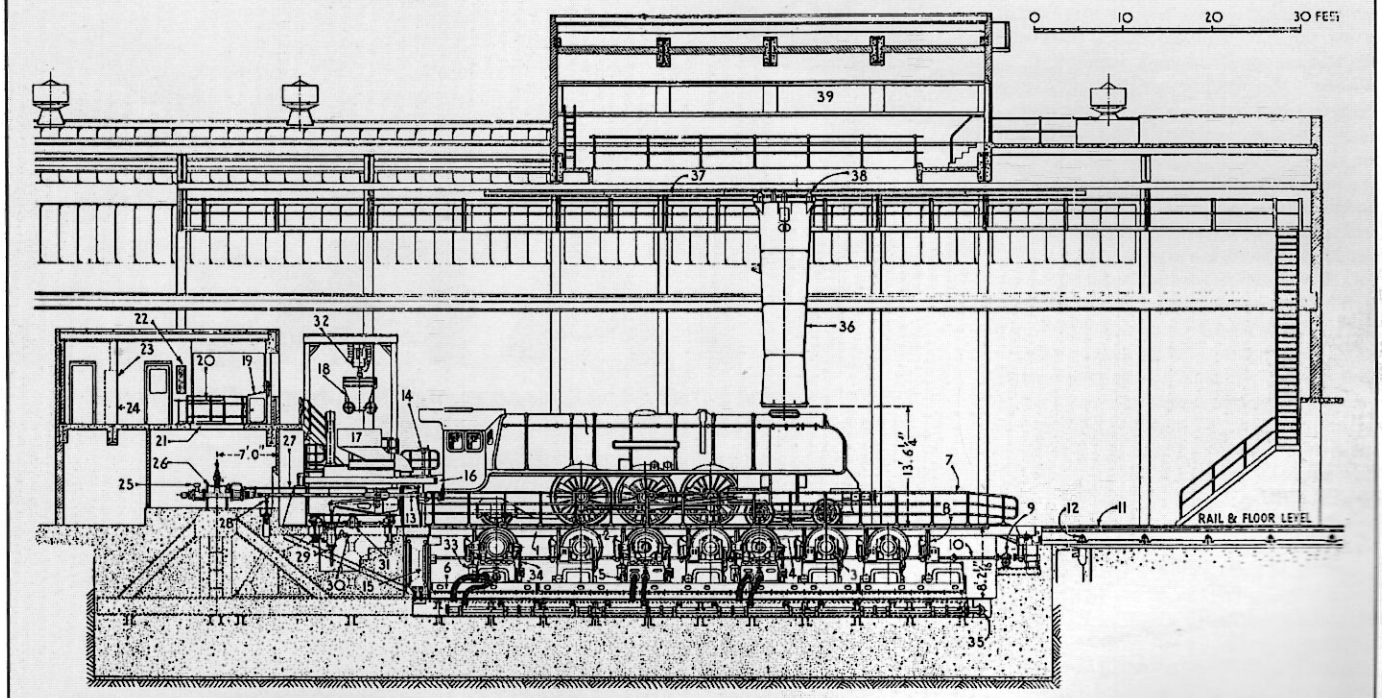


Class 9F 2-10-0 92166 with mechanical stoker on test at Rugby, Winter 1958–9. J. G. Click Collection/NRM

Even before the industry withdrew from the discussions in early 1936, the LMS and LNER boards had already formally authorised the necessary expenditure on a joint plant to be very closely modelled on Vitry. Roland Bond of the LMS was given the interesting task of superintending the entire project, being (uniquely) responsible to both Stanier and Gresley — and he made many visits to Vitry and consulted its engineers. Possible sites at Stratford (London), Peterbrough and Derby were examined; but by November 1936 Rugby was selected as it was served by main lines (ex-LNWR and GCR) of both companies, readily capable of conveying there the heaviest locomotives then extant.

With a sideways look at the current state of the locomotive art in the USA, the new plant was specified to be capable of accommodating 4-8-4 and 2-10-4 locomotives having axleloads of up to 30 tons. Passenger engines were to be run at equivalent speeds of up to 130 mph, the plant being rated to absorb 4500 hp, with a maximum of 6000 hp. This energy was to be

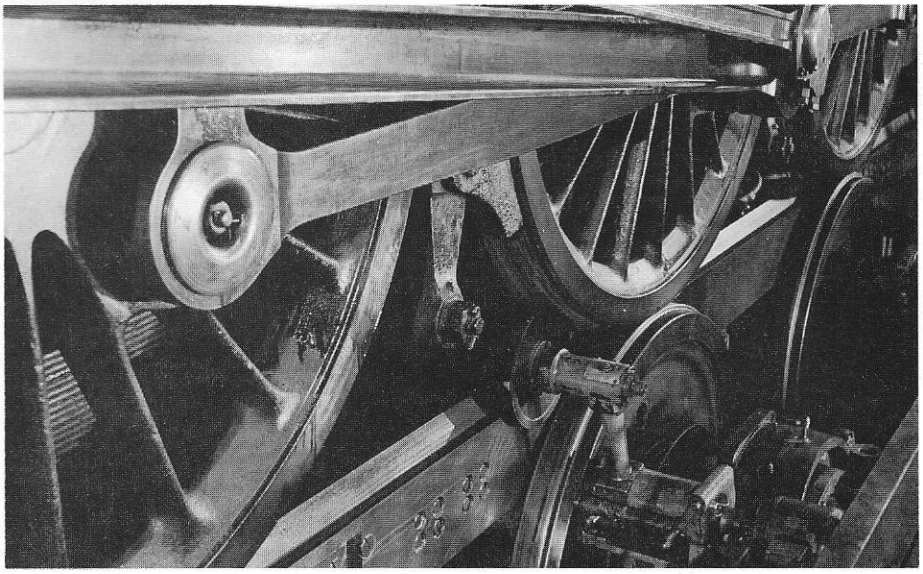
Rugby Locomotive Testing Station



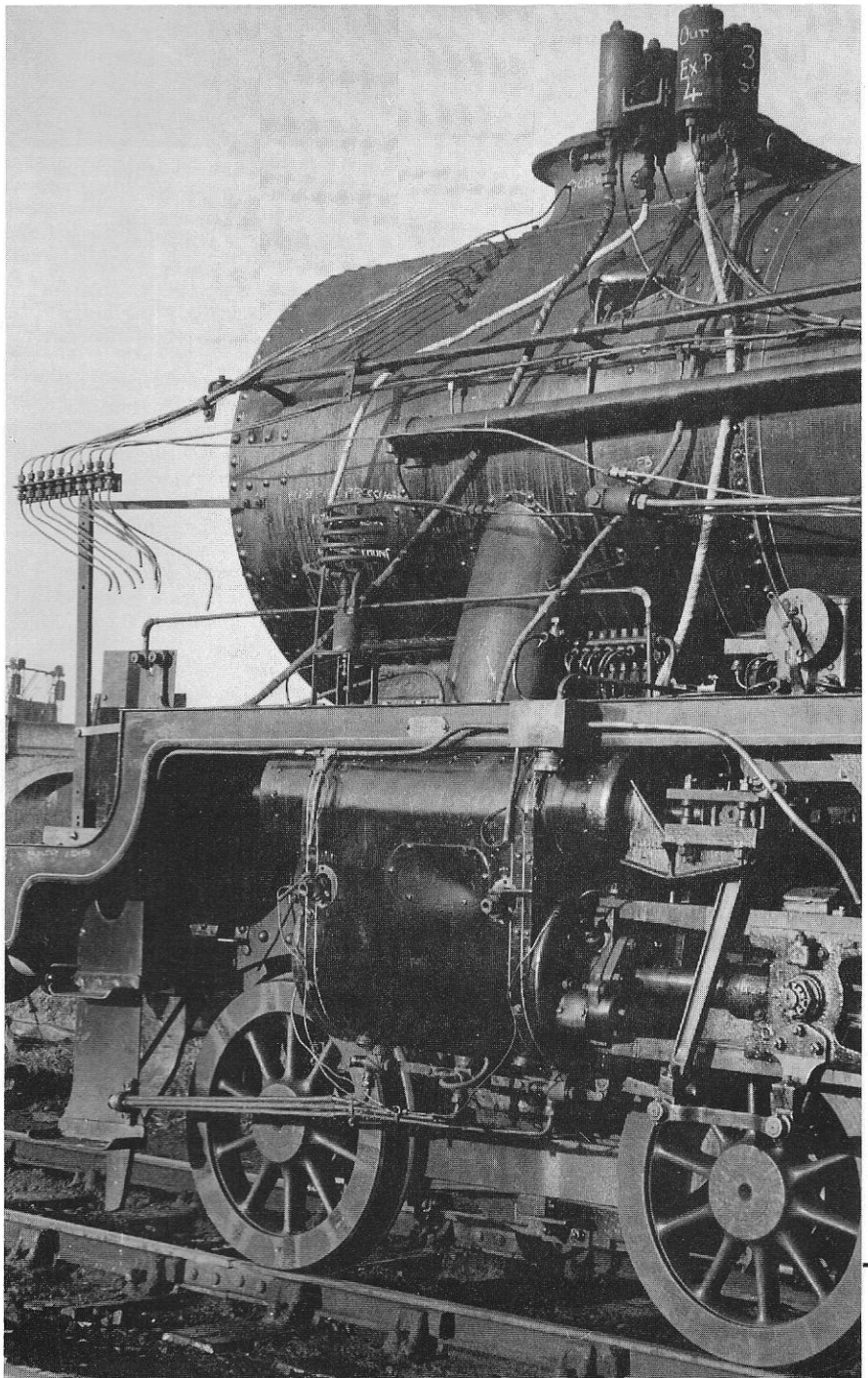
1. Locomotive lifting platform
2. Main drum
3. Drumshaft bearing
4. Dynamometer
5. Dynamometer roller
6. Dynamometer soleplate
7. Removable gangway
8. Crossbeam—gangway support
9. Reduction gear—lifting jacks
10. Operating shaft—lifting jacks
11. Extension rails
12. Rollers—to withdraw lifting platform
13. Main drawbar
14. Boiler feed control
15. Injector overflow measuring tank
16. Firing platform
17. Coal hopper on weighing machine
18. Portable coal truck
19. Dynamometer control desk
20. Amsler recording table
21. Glass panel in floor
22. Boiler feed tank telegages
23. Gas analysis panel
24. Pressure and temperature panel
25. Amsler dynamometer
26. Anchorage H beam
27. Mediating gear
28. Rear drawbar support
29. Damping dashpot
30. Dashpot motor operated needle valve
31. Dashpot carriage elevating gear
32. Electric travelling hoist
33. Dynamometer torsion measuring gear
34. Dynamometer dashpot
35. Dynamometer water supply ring main
36. Chimney
37. Chimney sliding plate
38. Chimney rollers
39. Smoke deflector

General arrangement of the locomotive test plant

dissipated in thousands of gallons of water circulating through Froude hydraulic brakes coupled directly to the rollers, which had to be positioned with great precision beneath each of the coupled axles of the locomotive being tested. The complex test bed was to be designed and built by Heenan & Froude Ltd. of Worcester, but the hydraulic dynamometer to measure the pull at the cab drawbar was ordered from Alfred J. Amsler in Switzerland. Actually *three* units were ordered, the other two for incorporation in new dynamometer cars to be built by the LMS and LNER which, owing to the war, were not finally completed until 1949 and 1951 respectively. This followed French practice whereby locomotive features were evaluated and fine tuned on the plant under 'laboratory conditions', and then on the road under traffic conditions. The LMS in 1937 also commenced building a three-car Mobile Test Plant which by sophisticated electrical means could produce a constant resistance to traction irrespective of speed and gradient, such as had been achieved on the LNER by converting an old North Eastern 4-6-0 as a counter pressure locomotive.



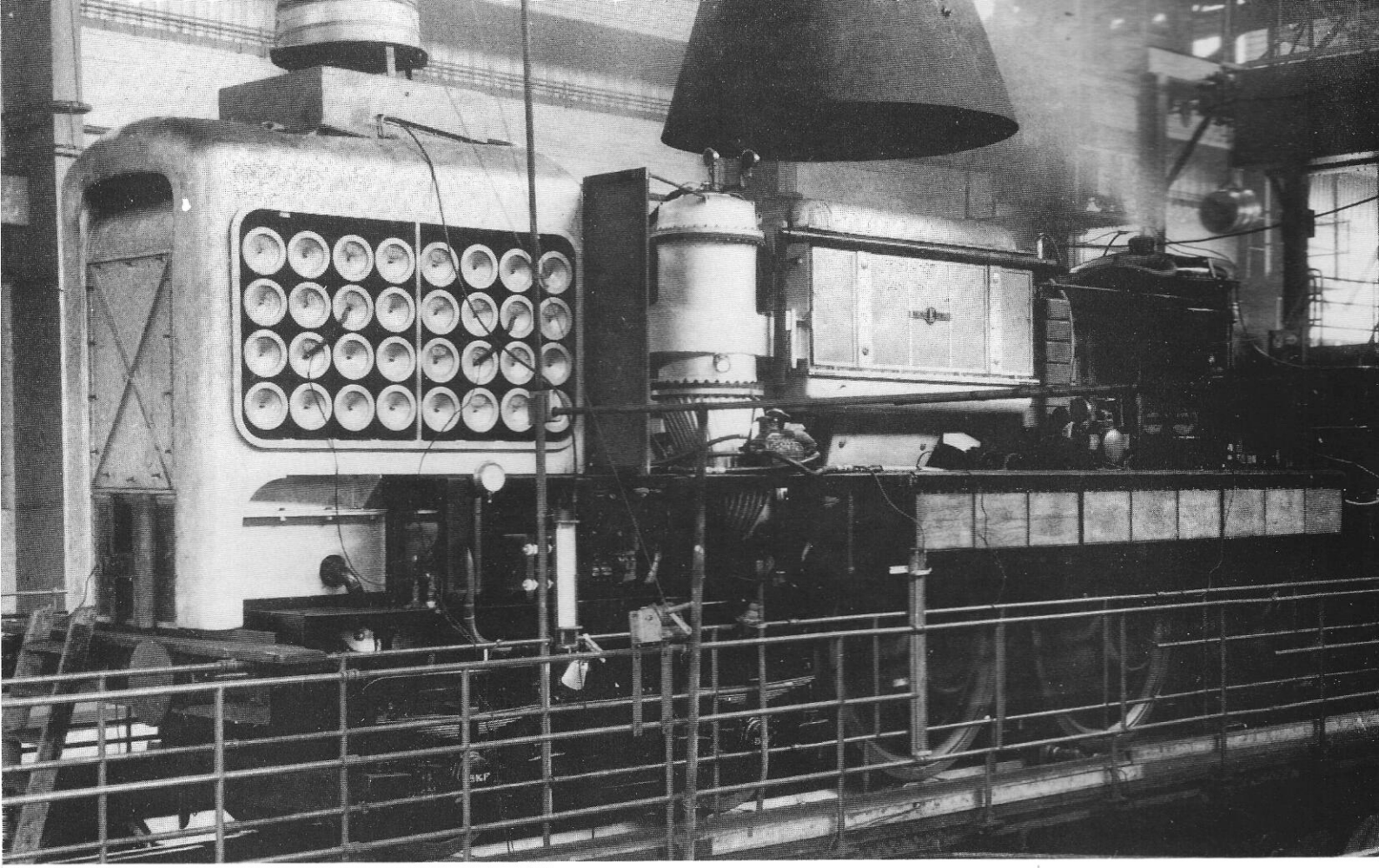
Close up detail of how the coupled wheels of a locomotive engaged the rollers. The engine ran in on the lifting table. The bar beneath the wheels, which formed a continuation of the approach tracks, was then lowered. Prior to this the rollers were positioned to correspond exactly with the wheel centres.
J. G. Click Collection/NRM



A full specification was completed in early 1938 and active construction of the testing station commenced about six months later, being well advanced when abruptly halted by the outbreak of war in September 1939. Work resumed in 1944 and the station was officially opened on 19th October 1948 with ex-LNER Class A4 4-6-2 60007 *Sir Nigel Gresley* on the rollers (see BACKTRACK Vol 3, No 3, page 123). Also present was the new LMS 4-6-2 6256 *Sir William A. Stanier FRS*, and Sir William himself, together with many dignitaries. The next few months were occupied with running in the plant and checking equipment, for which ex-Ministry of Supply 'Austerity' 2-10-0s (as the largest and heaviest multicoupled locomotives available) were used. Curiously, the first locomotive to be properly tested was a *four*-coupled engine, an ex-LNER Class D49 4-4-0 in 1949, but no *eight*-coupled locomotive was ever tested at Rugby. Interestingly, surviving pre-war correspondence indicates that Gresley had every intention of testing one of his magnificent Class P2 2-8-2s there once the plant was completed, for he had actually sent *Cock O'The North* to Vitry during the winter of 1934-5.

The basic function of the plant was to measure accurately pull at the *cab* drawbar at a given equivalent speed and cylinder cut-off. The input of coal and water was accurately measured, but many other facilities were potentially available. Temperatures at various points in the boiler and steam circuit could be continuously monitored, as could vacua in the smokebox and ashpan. The smokebox gases could be analysed for CO/CO_2 as an indicator of the efficiency of combustion. Particularly crucial was the determination of back pressure at the base of the blastpipe and the mean effective pressure in the cylinders. The latter was determined by the

LMR rebuilt 'Royal Scot' Class 4-6-0 46165 festooned for tests at Rugby. The cylinders mounted adjacent to the chimney were part of the electrical Farnborough Indicator.
J. G. Click Collection/NRM



An unusual view of the English Electric Co. gas turbine 4-6-0 GT3 (undressed), on test at Rugby, 1957.
J. G. Click Collection/NRM

rather frightening Farnborough Indicator which employed very high voltage electricity.

Tests in 1950 with an ex-LMS Class 5 4-6-0 (44765) concerned comparisons of single and double exhaust arrangements which were somewhat inconclusive. One outcome was that the double blastpipe and chimney originally proposed for the new BR Standard 4-6-2, upon which construction was just commencing at Crewe, was abandoned in favour of a simpler and cheaper single system. Down at the Swindon plant much attention was being given at this period to fine-tuning of the draughting arrangements of several pre-1948 locomotive classes, some of which had their maximum evaporation dramatically increased (in the case of the ex-LNER Class V2 2-6-2 this was more than *doubled*!). Prior to 1948 Swindon had also brought *road* testing to a fine art by working the locomotive at a *constant* steaming rate in terms of maintaining a steady smokebox vacuum/back pressure (monitored by a manometer in the cab) without the need for sophisticated equipment behind the tender other than the increasingly venerable Churchward dynamometer car.

The great majority of the work carried out at Rugby fell into two main categories, which sometimes overlapped:

1. Full scale performance and efficiency tests of certain pre-1948 and new BR Standard classes.
2. The evaluation of specific technical features.

The performance and efficiency test often also involved road testing, usually over the old Midland route between Skipton and Carlisle; but with the BR Class 9F 2-10-0s, these were conducted over the ex-GSW route between Carlisle and Hurlford.

At Rugby, Nottinghamshire coal was usually employed, initially from South Kirkby, and later from Blidworth Collieries. Locomotive tests with BR Standard Class 5 4-6-0 73030 in 1953 examined the relative efficacy of different grades of coal. As a normal practice, evaporation curves were derived, and numerous graphs evolved showing the inter-relationship at different steam rates of (equivalent) speed, cut-off, indicated horsepower (ie at the cylinders) and drawbar horsepower (ie available to pull the train). From these could be established the conditions under which the locomotives operated most economically, while design factors limiting performance and efficiency might be highlighted.

In plant tests the frictional resistance of the engine only was deducted from the cylinder horsepower to emerge at the drawhook, whereas in road tests there was also the tender and the additional aerodynamic resistance of both to consider. Even allowing for this there were at times some difficulties in reconciling data obtained at Rugby with that derived from road tests with the same engine. Sadly, by the time this was satisfactorily resolved (after recalling 2-10-0 92050 to the plant in early 1957 and indicating it with both the Rugby and Derby methods), the problem had become largely academic.

The largest engine to be tested at Derby was LMR Class 8P four-cylinder 4-6-2 46225 *Duchess of Gloucester*, whose final report was never published. Ironically it did not prove possible with this engine,

STATIC LOCOMOTIVE TESTS CONDUCTED AT RUGBY LTS 1949-1959
Excluding Performance & Efficiency Tests

LOCOMOTIVE	*DATES OF TESTS*	*PURPOSE OF TESTS*	*REPORT*
E/NER Cl D49 4-4-0 No. 62764	May-June, Aug 49	Reidinger RC poppet valves	R1 undated
LMR Cl 5 2-6-0 No. 42725	Feb-Mar, Aug-Oct 54	Walschaerts valve gear	R10 Jan 1957
LMR Cl 5 2-6-0 No. 42824	Nov 54-Jan 55, June-Sept 56	Reidinger RC poppet valves	R10 Jan 1957
LMR Cl 5 4-6-0 No. 44752	Jan-Feb 49	Caprotti poppet valves	—
LMR Cl 5 4-6-0 No. 45218	Jan-May 50	Optimum valve lead	R2 undated
LMR Cl 5 4-6-0 No. 44765	June-Oct 50	Single v. double exhaust	R3 undated
LMR Cl 5 4-6-0 No. 44862	Oct 50-Jan 51	Dirty v. clean boiler	R4 Jan 1951
BR Cl 5 4-6-0 No. 73030	Jul-Nov 53	Coal tests	R8 Jan 1954
BR Cl 5 4-6-0 No. 73031	Feb-Oct 58	Cylinder efficiency	E 229 June 1959
LMR Cl6 4-6-0 No. 45722	Sept 56-Feb 57	Improved draughting	R11 Oct 1957
E/NER Cl A4 4-6-2 No. 60007	Oct 48	Plant Opening	—
MoS/WD 2-10-0 No. 73799	Nov 48-Apr 49	Plant damping tests	—
MoS/WD 2-10-0 No 73788	Apr-Dec 49	Plant acceptance trials	—
BR Cl 9F 2-10-0 No. 92015	Oct 54	Modified regulator	R9 Nov 1954
BR Cl 9F 2-10-0 No. 92050	Mar-Apr 57	Indicator reconciliation	L 116 Dec 1957
BR Cl 9F 2-10-0 No. 92166	Nov 58-Mar 59	Berley mechanical stoker	R17 Oct 1959
BR Cl 9F 2-10-0 No. 92250	May-Sept 59	Giesl Oblong Ejector	R18 Sept 1959
EE Co. 4-6-0 No. GT 3	Jul 57-Jan 58	Gas turbine	R16 Feb 1959

LOCOMOTIVE PERFORMANCE & EFFICIENCY TESTS CONDUCTED AT RUGBY LTS, 1950-1957

LOCOMOTIVE	*AT RUGBY LTS*	*ON ROAD TESTS*	*REPORT*
E/NER Cl B1 4-6-0 No. 61353	Nov 50, Jan-Mar 51 June-Aug 51	Apr 51 S-C MTP Aug 51	BR Bulletin No. 2 Aug 1951* R7 June 1953
BR Cl 5 4-6-0 No. 73008	Aug-Nov 51, Jan-Feb 52	Mar 52 S-C	BR Bulletin No. 6 May 1953*
LMR Cl 7 4-6-0 No. 46165	Dec 55-May 56	None	None: see SLS Jrn Feb 1977
BR Cl 7 4-6-2 No. 70005	Apr-May 51 Dec 51-Jan 52	June 51 Jan-Feb 52 S-C	BR Bulletin No. 5 Apr 1953*
BR Cl 7 4-6-2 No. 70025	Oct 52-Feb 53 (Nov 53 for BBC TV)	—	
SR Cl MN 4-6-2 No. 35022	Mar-Oct 52 Mar-May 53 (single exhaust) Dec 53-Jan 54 (ditto + no thermic syphons)	Oct-Nov 52 S-C	BR Bulletin No. 10 Jan 1954*
LMR Cl 8P 4-6-2 No. 46225	Jan-May 55	Mar-May 55 S-C MTP	R10 Jul 1958
BR Cl 9F 2-10-0 No. 92013	May-Aug 54	Sept-Oct 54 C-H MTP	L 100 Aug 1955 (road tests only)
BR Cl 9F 2-10-0 No. 92023 (Crosti)	June-Sep 55	Oct-Nov 55 C-H	un-numbered May 1956
BR Cl 9F 2-10-0 No. 92050	Oct-Nov 55	Nov-Dec 55 C-H	L 108 undated

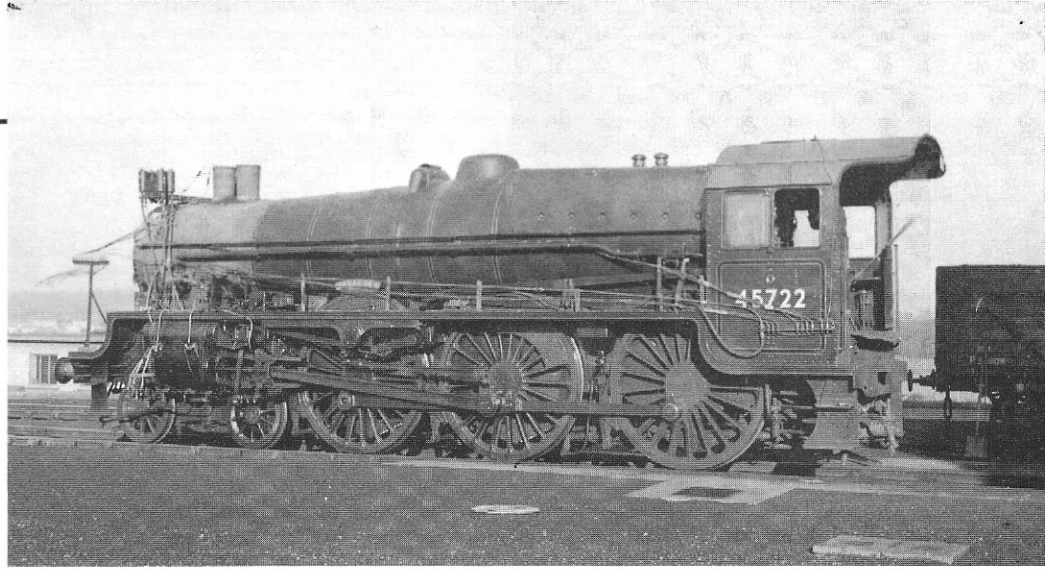
* BR Test Bulletins were publicly available at 10s (50p) each

S-C = Skipton-Carlisle
C-H = Carlisle-Hurlford (Kilmarnock)
MTP = Mobile Test Plant used

nor with the other two 4-6-2 designs tested there, to determine maximum output at Rugby due to fear of excessive slipping on the rollers causing serious damage to the engine. Both the 'Duchess' and 'Merchant Navy' were almost certainly capable of a sustained maximum boiler evaporation of at least 42,000 lb per hour, far above what a single fireman could achieve, but whose equivalent was perhaps approached for periods of a few minutes on occasions in ordinary traffic.

[The late Alec McNair, a personal friend of mine and from whose collection some of the pictures accompanying this article have been taken, worked at Rugby during the *Duchess of Gloucester* tests. He told me many years ago that 46225 had actually been steamed at 45,000 lb per hour, though official records were not kept. The engine did not slip, nor was the 'front end' beaten. The key factor, it seemed, was the firegrate, which reached its limit and began to choke up. Alec always maintained that this supported the LMS wish to go to a 4-6-4 with 70 sq ft of grate area and mechanical stoker but without appreciable change in the rest of the 'Duchess' configuration as far as boiler and cylinder dimensions were concerned. Readers' views would be welcome. ED]

The Merchant Navy underwent a second stint at Rugby when its Lemaitre multiple exhaust and large diameter chimney was replaced by a simple single exhaust arrangement. This failed to develop such a high maximum evaporation. Tests were also made to determine the effect of removing the thermic syphons from the firebox, but it proved difficult to evaluate this due to the completely different pattern of brick arch which now had to be installed. The final verdict on the Merchant Navy was "that it is a most effective and capable engine but one that is relatively uneconomical." Plans to



LMR 'Jubilee' Class 4-6-0 45722, with temporary double stovepipe chimney arrangement during trials, seen outside Rugby Plant, Winter 1956–7.
A. McNair Collection/NRM

drastically rebuild the class commenced soon afterwards, but regrettably the first modified example was tested at Swindon rather than at Rugby. Swindon also tested the solitary BR Class 8 4-6-2 71000 *Duke of Gloucester*.

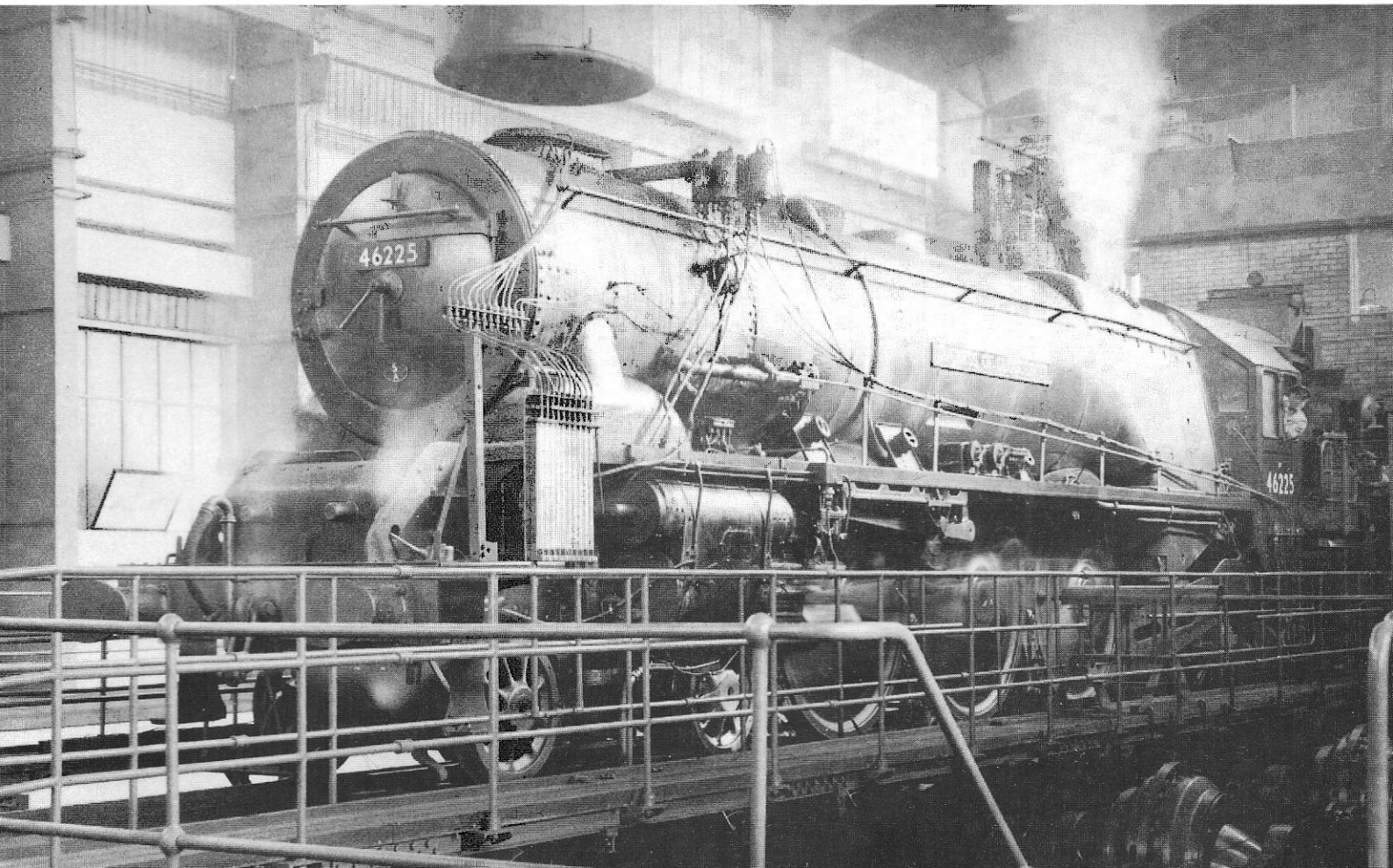
Extended tests of a rebuilt LMR 'Royal Scot' 4-6-0 were made at Rugby but the copious data obtained was never officially analysed and no report was produced.

No less than six BR 9F 2-10-0s were tested at Rugby, the first being brand new 92013, sent up from Crewe in May 1954. Just a year later 92023 with Crosti boiler, one of ten such engines so fitted, was sent for detailed evaluation. The complex licensing agreement with the parent Italian firm stipulated that royalties should be calculated according to economies observed referred to a standard 2-10-0, of which 92050 was the engine selected. The improvements gained were minimal, almost within experimental error, the Crosti engine showing a distinctly higher internal resistance, with the result that no payment was strictly necessary!

In 1958 three 9Fs were built with Berkley mechanical stokers to determine whether these could enable the 2-10-0s to operate heavier and faster freight train schedules with poorer quality fuel. No. 92166 was tested at Rugby during the winter of 1958-9 when it was found that maximum evaporation was slightly increased, but boiler efficiency was significantly reduced. Also at the same time the stoker itself was an auxiliary which consumed a measure of steam, and not surprisingly the official verdict was: "Economically (the stoker) cannot be defended."

These tests were immediately followed by investigation of the Austrian Giesl Oblong Ejector fitted to 92250. The engine

LMR 4 cylinder 4-6-2 46225 ***Duchess of Gloucester*** **turns the rollers, 1955.**
A. McNair Collection/NRM



arrived with its standard double chimney, with which it was tested for one month. After that the distinctive Giesl device was installed, and no fewer than 84 tests were then made supervised by Dr Giesl himself. Terminating with that on 1st September 1959, steam locomotive testing at Rugby also came to an end. The Giesl Tests had been prompted by claims that the device enabled small-sized fuel to be burned, but this was not proved and the final report was not enthusiastic.

Other work at Rugby had concerned the evaluation of poppet valves, more particularly the Reidinger rotary cam gear fitted to five LMS 'Crab' 2-6-0s in 1954. No. 42725 of the standard Walschaerts variety when tested initially was found to be a poor steamer, but subsequent modification to the draughting raised the maximum evaporation from under 16,000 lb to 20,000 lb per hour. No. 42824 with poppet valves was the other guinea pig, but the final conclusion was that "on locomotives of this class, there is nothing to be gained from the point of view of steam or fuel consumption, while locomotives are in new condition."

It was to determine by how much efficiency did decline with less than perfect condition that ex-LMS Class 5 4-6-0 44862 was tested during the winter of 1950-1, initially with a 'dirty' boiler, and then with the boiler thoroughly cleaned. Surprisingly there was remarkably little enhancement in thermal efficiency on the part of the clean boiler. In late 1956, ex-LMS 'Jubilee' 4-6-0 45722 *Defence* was investigated to see how its draughting could be improved to counter declining fuel quality. A double exhaust was tried with success but the findings were scarcely put into effect on the class as the expenditure was not judged worthwhile in view of impending dieselisation.

The last 4-6-0 to ride the rollers was BR Class 5 73031 during 1958. In the only piece of 'academic' research conducted at Rugby, steam temperature was electrically controlled and increased so as to be independent of the level of evaporation in an investigation into factors influencing cylinder efficiency.

It will be seen from the foregoing that such results that were obtained from Rugby during its limited period of operation were largely either inconclusive or disappointingly prosaic. Fleets of stoker-fired Giesl-equipped 2-10-0s would *not* have kept the diesel at bay in the 1960s on BR. Steam locomotive design had reached a peak by the early 1950s, at least in the conventional sense, and little further improvement was possible which would have produced an economic return on investment. Increasingly poor fuel, the Clean Air Act, and full employment sounded steam's death knell.

It is not generally realised that a potential successor to the steam locomotive was extensively tested at Rugby in late 1957. This was the English Electric Co. gas turbine 4-6-0 GT3 with mechanical transmission, which did not make its public *debut* until 1961, when it commenced some trials on BR. It was a most attractive machine, with strong leanings towards steam practice. The log of the various static tests makes for alarming reading 'gearbox flood at 90 mph', 'louvre packs red hot', 'base of turbine inlet ducts red hot' etc. A bold experiment, the engine was eventually broken up in 1966 after four years' disuse.

Unlike in France, where Vitry was suitably adapted, road testing for the evaluation of diesel and electric locomotives was the procedure on BR, sometimes using the full Mobile Testing Plant. With the benefit of hindsight it can now be said that by 1948 Rugby was largely unnecessary, coming too late to make much positive contribution, in view of the soon fading interest in steam, and the availability of good road testing techniques. Unavoidably delayed in completion by nearly ten years due to the war (after which the *Swindon* plant also found extended use), had it been built in say the early 1920s, for common use by the railways and private industry, the story might have been very different. Thus after barely eleven years, Rugby fell into virtual disuse and was eventually dismantled in 1970. Its records, including correspondence files, full specification, log books, raw instrument data, and technical reports were still on the premises in 1976 when they were transferred to the National Railway Museum at York. This body also received the papers of the late Roland Bond following the latter's death in 1980. Finally following the sudden death in late 1988 of a former technical assistant at Rugby, John Click, his records were also bequeathed to the NRM. This included some possibly unique 35 mm colour transparencies recording activities there c.1952-1955, of which a selection accompanies this article.

Note

Cylinder (indicated) HP — Frictional + aerodynamic* losses = Drawbar HP

Drawbar HP = 5.97 × Drawbar pull (tons) × Speed (mph)

* aerodynamic losses not applicable on test plant

One of the first BR 9F 2-10-0s, 92013, on the Rugby plant for performance trials, Summer 1954. The battery of fine tubing ahead of the cylinders consists of manometers for measuring the vacuum in different parts of the smokebox.
J. G. Click Collection/NRM

TWO UNKNOWN

GRAHAM KIRKPATRICK *considers a strange feature of the Charfield Disaster*

On 18th November 1987, at the peak of the evening rush hour, oil and dust under an escalator at London's King's Cross Underground Station was ignited, perhaps by a cigarette end that fell through the treads. Dense smoke filtered through to the passenger area and was quickly followed by a fireball. Thirty-one people died in the suffocating smoke and searing heat.

One of the dead was a man thought to be between 40 and 60 years old and probably with 'good strong English features'. And that is all that is known of him. He was not identified; his charred body was not claimed by relation or friend. A lonely human being had died horribly, anonymously, in the great impersonal city.

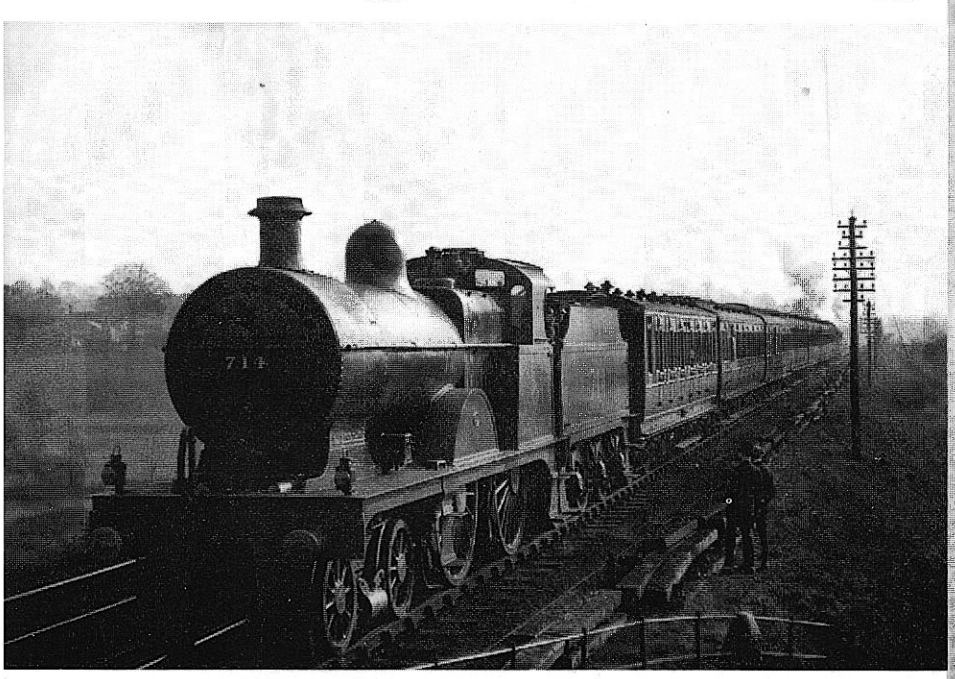
Media reports on the fire and its unknown victim gave people a feeling of having glimpsed, as through a ruffled curtain, a tragedy behind a tragedy and reminded some of another fire-ravaged disaster almost sixty years before.

Between four and five o'clock on the morning of Saturday 15th October 1929 four trains were approaching Charfield from the north. The nearest were two freight trains and behind them was the 12.45 am Leicester to Bristol express parcels followed by the 10.00 pm Leeds to Bristol passenger and mails express. Coming up from the south was a long train of empty mineral and freight wagons. All were being monitored by Traffic Control.

The parcels express was rapidly closing the gap between it and the freight trains and it was decided to stable both freights to give it a clear road. The leading train was put into Charfield and the second into Berkeley Road Junction, the next block post in the rear at that hour. Both shunts were carried out according to plan and the parcels train continued its journey without delay.

Then things began to go wrong.

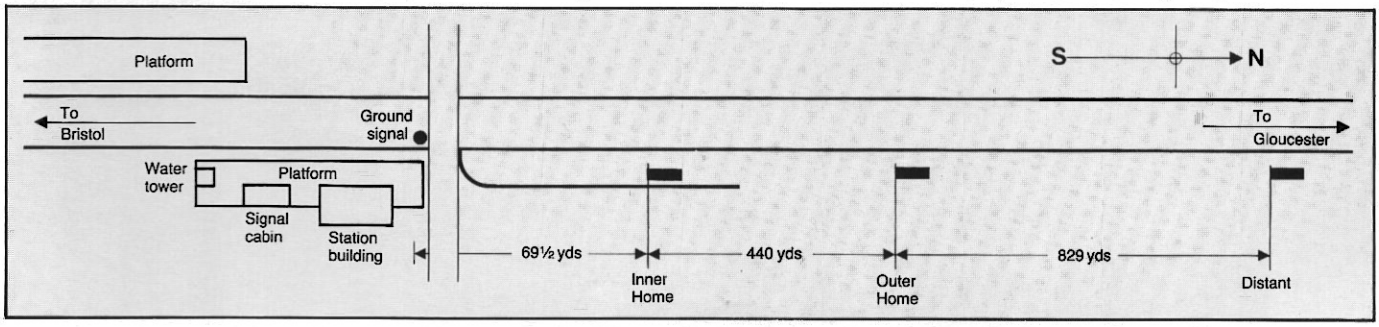
On leaving the siding at Charfield, the driver of the first train, without previously informing the signalman of his intention, stopped on the down platform to take water. Had he, when setting back into the lay-by siding, sent his fireman to the signal cabin to inform about the need for water the signalman would have 'phoned Control and his colleague at Berkeley Road Junction and the second train would have been held there until the passenger-mails express went through. But without this fore-knowledge he accepted the second freight immediately the section was clear to his Outer Home signal.



The former Midland Railway engine involved in the Charfield accident was Class 3 Johnson 'Belpaire' 4-4-0 714, seen here on a happier day climbing the Lickey incline with a rather similar sort of train to that which was wrecked. Photo: T. J. Edgington Collection.

The six minute halt for water checked the progress of the following train so that it too had to be stabled at Charfield to clear the path for the Leeds-Bristol express — no doubt the train crew were annoyed by this second shunt. And, as the shunt was a setting back movement, it could not be completed in time to avoid some delay to the express.

If the signalman was concerned about the situation that had developed it would only have been because every railwayman's impulse is to keep express passenger trains running to time. He would certainly not be worried about the safety of the express: it had one caution and two stop signals between it and the goods train that was being pushed out of its way. The first of those was the Distant (caution) signal 1338½ yards in advance of the turn-out points, then the Outer Home at 509½ yards and the Inner Home at 69½ yards from the points. Interlocking of points and signals ensured that the Home signals could not be pulled when the lay-by points were open, nor could the Distant show clear until both Home signals were also at clear. The turn-out was thus fully protected and, in addition, there was a temporary 45 miles



an hour speed restriction on that part of the line, giving the express an extra margin of safety.

The turn-out was directly under a road bridge that spanned a deep cutting at the northern end of the station. This was to have a lamentable effect on what followed.

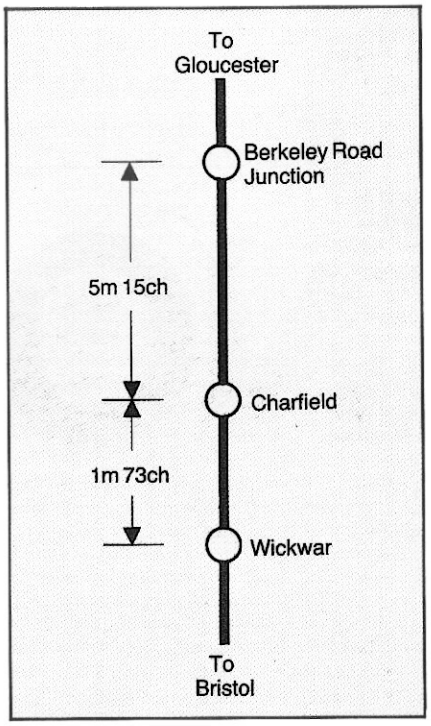
In his cabin on the Down Platform of Charfield Station the signalman watched the flickering lights on his track layout panel and saw to his horror that the Leeds-Bristol express was passing the signals set against him and at a speed far in excess of that authorised.

A collision was almost inevitable. It could be averted only if the driver of the express made an immediate emergency application of his brakes or if the freight train cleared the points in the next few seconds. And, to add to the potential hazard, the long train of empty wagons was lumbering up from the south towards Gloucester and was almost into the station.

The signalman immediately threw back his signal levers to halt the northbound train, telegraphed 'Line Obstructed' to the cabins at Berkeley Road Junction and Wickwar (the next block post south) and kept his hand on the points lever, ready to change the setting immediately the track lay-out panel showed that the freight locomotive had cleared the main line.

But Time was determined to deny his precautions their just reward. The northbound train had already entered the station: the driver of the express had not yet applied his brake: and the reversing freight train was still partly on the main line.

The three trains came together in an appalling clash of steel and timber rendered more lethal by the confined space under the bridge and the speed and weight of the express — locomotive (LMS 4-4-0 number 714) and train together weighed over 450 tons — and at the moment of impact it was moving at well above the 45 mph speed restriction.



No. 714 hit the first two wagons and the tender of the goods train, slewed to the right leaving its tender locked in the wreckage it had created then ploughed into the eighth wagon of the northbound train, demolishing it and the following seven wagons before falling against the cutting 25 feet south of the overbridge.

Its train, obstructed by the ruined wagons, loose tender and the other locomotive jammed under the bridge, telescoped and one of the passenger coaches over-rode the vehicles in front to come to rest over-hanging the parapet of the bridge with its roof detached and straddling the road.

It was a mixed train: two parcels vans followed by four passenger coaches, a mail sorting couch, a mail van, two more parcels vans and a composite passenger-guard's coach in the rear. Only the second passenger coach and the rear coach were lit by electricity, all the others had gas lights fed from storage cylinders slung on the underframes, and all were wooden bodied. Aboard were over sixty passengers and Post Office sorters and the usual train crew of driver, fireman and guard.

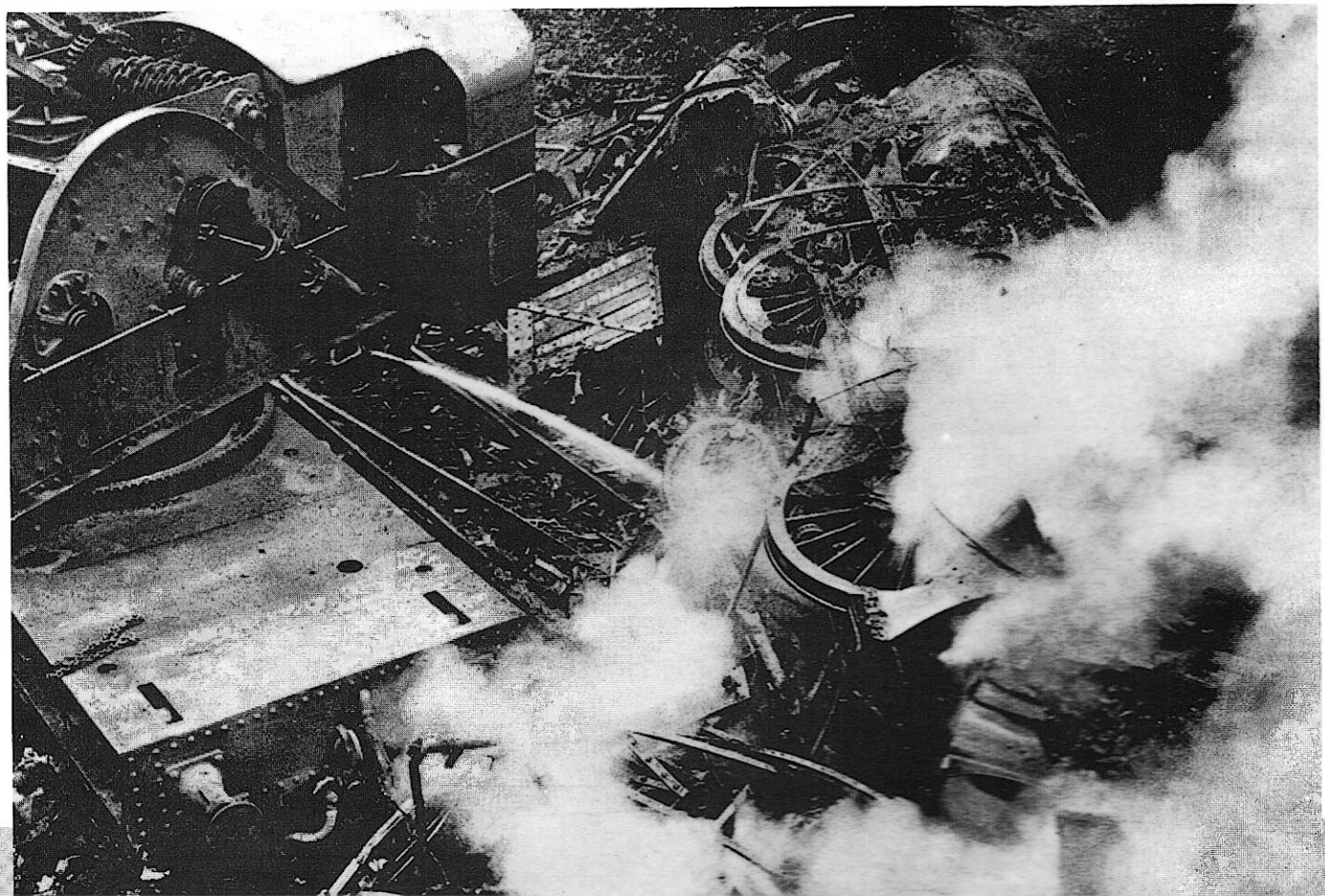
In an instant, the quiet, orderly Charfield Station, snug in the rich Gloucestershire farmlands, bathed in a light Autumn mist, erupted at its north end in a chaos of wrecked trains with, seconds later, the added horror of fire caused by fractured gas pipes and cylinders. The fire blazed for twelve hours. Sixteen people died and forty-one were injured.

Among the charred, broken bodies were those of a boy of about eleven years and a girl perhaps three years younger travelling together but unaccompanied.

So many seemingly malign circumstances coincided to cause this awful accident that much can be made of the sad, unavailing thought: "IF".

There would have been no accident
IF the driver of the first goods train had told the signalman that he would need to take water before continuing his journey:
IF the second goods train had cleared the points just ten seconds sooner — the Railway Inspectorate's estimate:
IF the driver of the express had not passed the Home signals:
IF he had observed the speed restriction on that section of track:
The worst effects of the collision would have been avoided
IF the driver of the express had applied emergency braking even so close as the Inner Home signal:

The wreckage of 714 following the diaster, scarcely recognisable alongside the breakdown crane.
Photo: Topham Picture Library



The railway at the now disused Charfield station in 1984, showing the bridge under which the 1928 accident took place. Photo: Stuart Seager, courtesy 'The Countryman' Magazine

IF the bridge and cutting had not been there to confine the force of the impact:

IF the coaches had all been lit by electricity:

IF the coaching stock had been steel bodied.

Colonel Pringle, who conducted the Ministry of Transport Inquiry into the accident, reported those points and repeated, for the umpteenth time the Railway Inspectorate's recommendation that all gas lit and wooden bodied coaching stock be withdrawn from service.

Some months later the driver of the Leeds-Bristol express was charged with manslaughter and acquitted because of conflicting evidence about the density of the dawn mist and the aspect of the Distant signal when he passed it. He claimed that it was either partially or wholly showing 'clear'.

In the days and weeks immediately after the accident the dead were identified one after another and some of them were taken home for burial at the request of relatives.

On the 56th day, 10th December, the local coroner, sitting for the fourth time to hear evidence about the victims, was told that only the bodies of the two children remained unidentified and unclaimed; they had been buried, on his authority, with ten other victims in the churchyard of the little parish church of St. James near the station. The burial service had been conducted, in heavy rain, by the vicar with only a few parishioners and railwaymen at the graveside.

In September, almost a year after the accident, the LMS Railway Company had a headstone erected at the grave. It was inscribed with the names of ten of those interred and "two unknown".

The two children have still not been identified. No parent or grandparent, no uncle or aunt, no cousin or guardian claimed them: no neighbour remarked upon their absence: no schoolmaster or mistress reported having seen them off on their fatal journey or that they had failed to arrive when expected. The train in which they died started its journey at Leeds and several others made connections with it there and at intermediate stations but no one could recall seeing them join at any of those stations.

They were noticed only at Birmingham where the guard (who died of his injuries) spoke to them in their compartment and the fireman (who survived) received a cheery wave from them as he walked up the platform to his engine. He was surprised that they were apparently unaccompanied, especially on a night train, and without luggage. (It was suggested at the first sitting of the coroner's inquest that they may have had cases in one of the forward luggage vans that were totally consumed by the fire.) He said that the children were well dressed and that the boy wore a brown and yellow school cap and blazer, but this clue to their identity did not yield any more information. Press reports and a thorough investigation by the LMS police were no more successful.

The mystery remains — a sad, unfinished story of two young children, possibly on their first Great Adventure, almost certainly looking forward to Christmas, who met death in a horrible way in the heart of rural England in the cold dawn of an October day and who are likely to be for ever "Two Unknown".

The grave of the accident victims in the churchyard at Charfield. Photo: Stuart Seager, courtesy 'The Countryman' magazine

The 1.55 pm (SO) train from Melton Mowbray to Leicester Belgrave Road on 7th November 1953 is seen here prior to departure from Melton. Photo: Ian L. Wright

A Diary of Decline

CHARLES BAYES *records the fascinating yet sad story of one line's fight against the odds in early BR days.*

In the early 1930s I sometimes saw the 4.15 pm Birmingham semi-fast leaving Euston and noticed that the last coach was labelled 'Melton Mowbray'. Reference to maps revealed the existence of a line connecting Market Harborough with Nottingham via Melton Mowbray and the ABC Guide listed it as an approved route between London and the Midlands. The history of the line is lovingly and vividly recounted by P. Howard Anderson in the East Midlands volume of David and Charles' 'Forgotten Railways' series, and there is also an informative booklet by D. L. Franks.

1948

I knew nothing of this history in 1948 when, on 4th August 1948, I caught the 6.05 pm slow train to Nottingham (Victoria) from Northampton (Castle). Although seven months had passed since nationalisation, few engines had been renumbered and it was LMS Class 4F 0-6-0 4223 of Nottingham shed that headed our modest train of three compartment coaches along the former LNWR branch to Market Harborough. From this point northwards the Joint line began, and provided a leisurely journey on an expensively-engineered double track railway running through mile after mile of lonely and unexpectedly hilly countryside, the haunting vastness of High Leicestershire with its gated lanes and the Vale of Belvoir.

The 64 mile trip lasted 2¼ hours and gave ample opportunity to savour the scenery; railway features claimed attention, particularly Welham sidings where coal trains from the North were marshalled for ex-LNWR destinations, Marefield Junction giving access to the GNR-built Leicester branch, and the spacious but empty platforms of Melton Mowbray (North). Until this point LNWR influence and practice in buildings and signalling had been paramount, though the station buildings looked in need of paint or repair and fences were marked by missing or broken palings. Goods yards contained more weeds than wagons, though Tilton provided a surprise with iron-ore wagons in the yard, together with a narrow-gauge saddle-tank engine nestling against the steep western side of the cutting. The ironstone workings and the rail connection were not even shown on the Ordnance Survey map.

Beyond Melton, GN somersault signals appeared. The bay platform at Scalford announced the ironstone branch to Waltham-in-the-Wolds, and the layout at Harby & Stathern with its island platform was witness of its previous importance as a junction for three different GNR destinations, Nottingham, Newark, and Grantham.

During the journey, only two trains had passed in the opposite direction, the 6.28 pm all-stations from Nottingham to Northampton and a seven wagon goods train from Colwick hauled by LMS Class 8F 2-8-0 8658. The overwhelming impression had been of a forgotten main line with sparse traffic, switched-out signalboxes, and a sense of remoteness that I had only

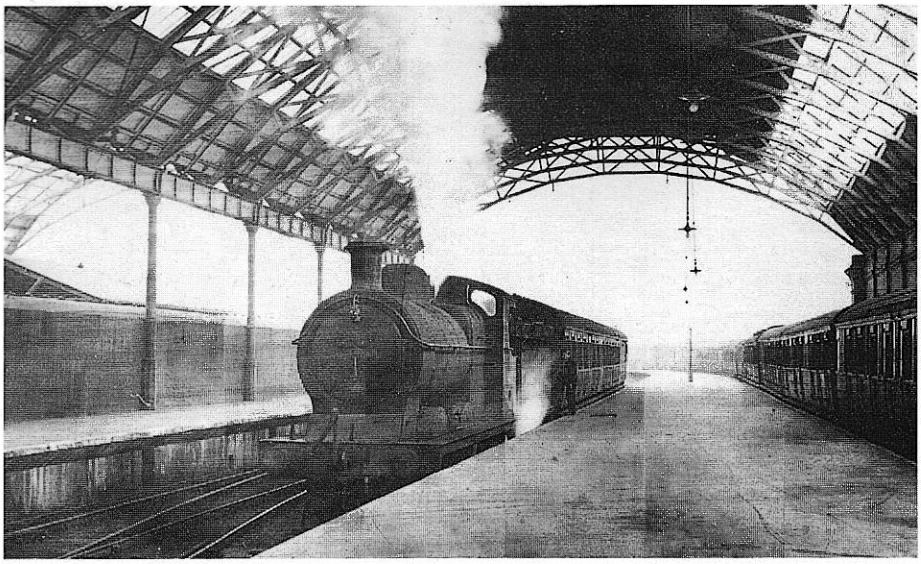
experienced in the depths of Ireland. Obviously, further investigation was demanded.

1949

The Northampton-Nottingham service was the old LNWR's province; it was met and crossed by the GNR-monopoly from Leicester and the two routes shared fifteen miles of joint railway from Marefield Junction to Stathern Junction. On 30th July 1949 I spent much of the day on foot or in local buses in order to start my exploration of the Leicester Branch at John o'Gaunt; as I approached the station I found that the noises of activity came not from the goods yard but from the adjoining CWS creamery, whose products now used road transport.

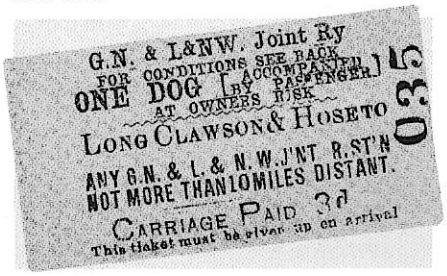
The train service was meagre; my object was to catch the Saturday-only 2.08 pm Melton Mowbray-Leicester slow and photograph the 1.00 pm express from Grantham to Leicester, whose introduction had been widely announced in handbills and placards and which gave good connections from the East Coast main line. The booking clerk duly sold me a day-excursion ticket (No. 0009) to Leicester, and told me that the 2.08 pm would not be calling until 3.05 pm! At about two o'clock the signals were pulled off for the Up line and I waited for the express, speculating on its formation — perhaps a K2 on half a dozen vestibuled coaches would make the important connections at Grantham? I stood in the rain on the platform-end, but it was not until fifteen minutes had passed that heavy grey smoke drifted down the line, and with very slow exhaust beats a green engine wheezed into view and stopped at the signal-box. The load of three compartment coaches (two of them articulated) had proved too great a strain on the 1:120 gradient of Great Dalby bank for Class D3 4-4-0 2000, the former inspection engine and the driver could not persuade her to further efforts. His comment was: "They told me at Grantham she was a bad'un".

The signalman 'phoned Leicester for a replacement; the few passengers peered out of carriage windows; the loco simmered; the railwaymen chatted on the line. Then the complete quiet was broken by the arrival of the 2.20 pm local from Market Harborough to Melton Mowbray, four well-filled coaches behind Class 4F 44367,



The 1.55 pm (SO) train from Melton Mowbray to Leicester Belgrave Road on 7th November 1953 (opposite) is seen here just after arrival at Leicester behind Class J11 0-6-0 64438. Photo: Ian L. Wright

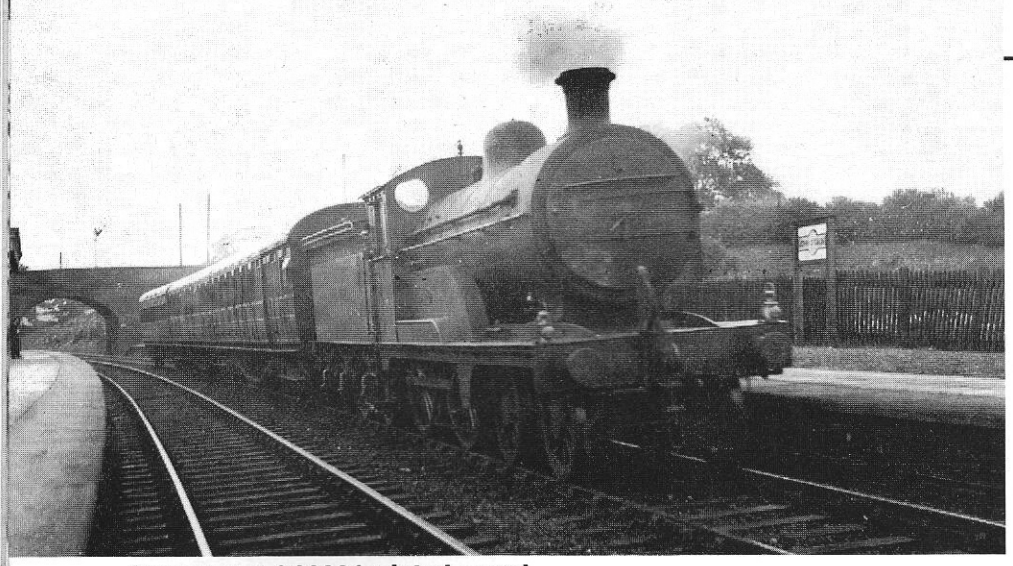
running tender-first. No-one got in or out on the weedy platform. There followed a half-hour wait until whistling announced the relief from Leicester, old GNR Class J1 0-6-0 5009, removed from its gentle duties in the goods yard and adorned with express headcode to complete the journey over an hour late.


G.N. & L&NW. Joint Ry
FOR CONDITIONS SEE BACK
ONE DOG [ACCOMPANIED BY PASSENGER]
AT OWNERS RISK
LONG CLAWSON & HOSETO
ANY G.N. & L. & N.W. J'NT R.ST'N
NOT MORE THAN 10 MILES DISTANT.
CARRIAGE PAID 3d
This ticket must be given up on arrival
03

Hardly had it gone when, punctually at 3.05 pm, our 'local' arrived from Melton: three coaches containing about a dozen passengers with Class J2 0-6-0 65023 in charge. We set off past 2000 in a siding, her brightly-polished 1897 builder's plate gleaming, when to my surprise came to a halt at Marefield Junction; I had forgotten that the afternoon train to Nottingham was due. When it had passed (Class 2P 4-4-0 40657 on four coaches), we moved on to the Leicester branch but stopped at the signal box. The engine crew produced tools and there was much hammering and cursing until the driver called out to the guard: "All right, Albert, you'd better go courting, we've got a bent crank pin". The assault on 65023's interior continued while we passenger-prisoners leaned out of windows; and then the driver announced: "I'll give her a bit more oil and we'll risk it." Slowly, to the accompaniment of piercing screams from protesting steel, we moved off and after many slow minutes pulled into Lowesby station.

Here was a great surprise which was repeated at all the intermediate stations except Humberstone, for the brick station with its awnings was cheerful and well-kept. Flower-baskets hung from the girders, geraniums blazed in painted tubs, and hollyhocks stood in trim rows before the fences. These branch stations had never been "joint" but were GNR, later LNER, and the difference showed. There was ample time to admire them, because at each stop poor 65023 was knocked and coaxed into tackling the hazardous three

Leicester Belgrave Road on 12th May 1951. The new upper quadrant signals were rarely raised, except on Bank Holiday weekends. Photo: Charles Bayes



Class D3 4-4-0 2000 (painted green) on the point of expiring at John o'Gaunt Station with a Grantham-Leicester fast train on 30th July 1949. It was relieved after a long delay by Class J1 0-6-0 5009.
Photo: Charles Bayes

miles to the next station. We took seventy minutes for the 11¼ miles from John O'Gaunt, and when we arrived at Leicester, the only movement in the spacious five-platform station was 5009 shunting the stock of the ill-fated express. As we were so late I waited for the arrival of the regular summer excursion from Skegness; it came in behind filthy Class K2 Mogul 61763 and had twelve amply filled coaches. These seaside trains alone justify the station which on a normal afternoon sees no train between 2.18 and 6.10 pm. There are now only two daily trains to and from Grantham.

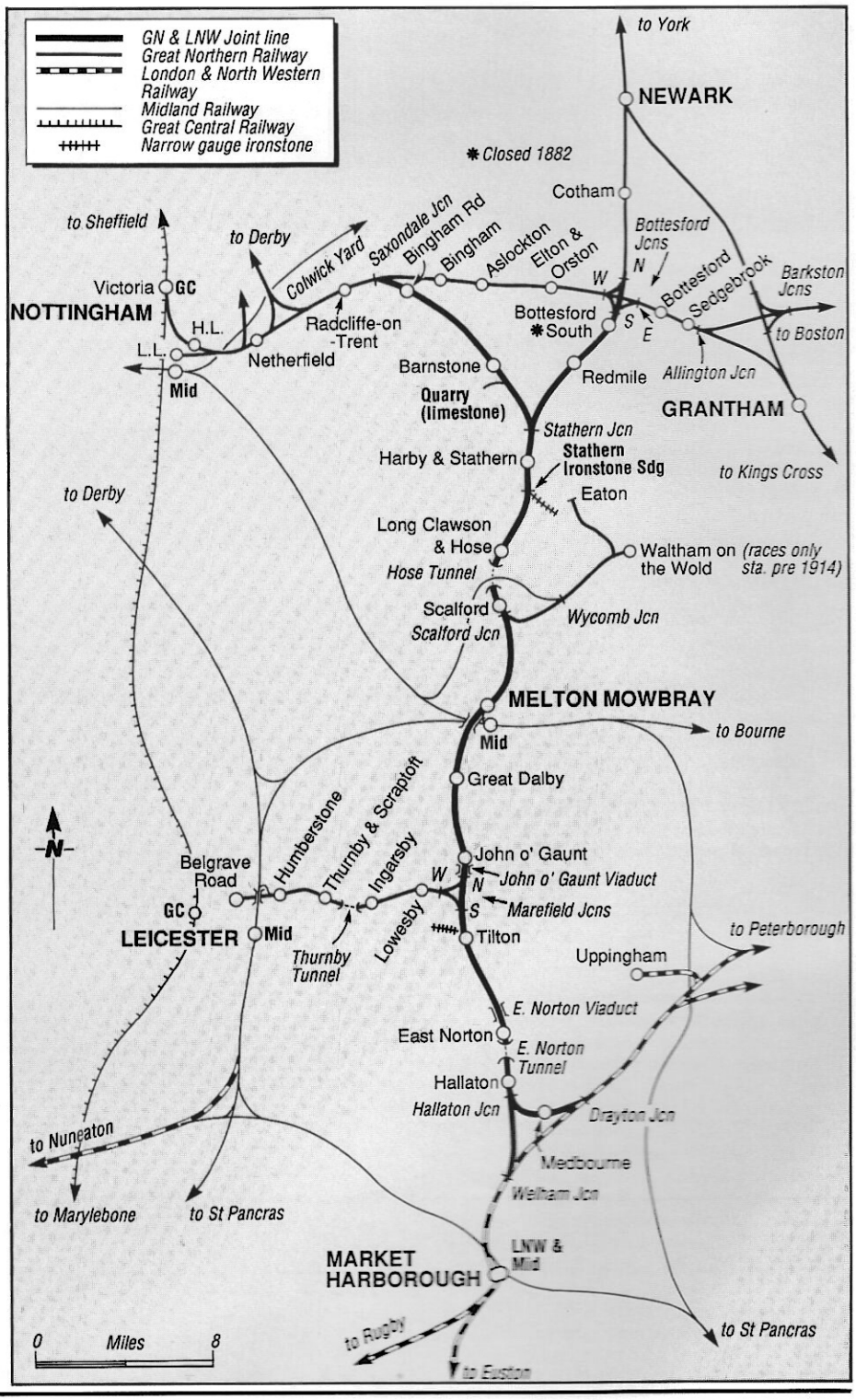
1950

Bottesford was obviously a key point in the Joint lines' aspirations even though all the lines that met there were worked by the GNR. The Nottingham to Grantham line crossed over the Stathern Junction to Newark line, and connections were made North to West (which enabled the GNR to run a Nottingham-Newark service in hopeless competition with the Midland) and South to East (which made possible the Leicester-Grantham express already mentioned). These still remained in 1950, though a South to West link had been cut long since. A station had existed for a short time at Bottesford (South), and the Junction signalbox made possible the nocturnal goods trains from Doncaster and Newark to London via LNWR metals. However, the signalbox was normally switched out by day and it was the responsibility of the Bottesford (East) signalman on the Grantham line to operate the South box when required, by switching his own box out!

All this I discovered on 2nd June 1950 when I stood on the site of the South station to photograph the express to Leicester, now timed to leave Grantham an hour later, at 2 pm. It appeared punctually, reduced to an articulated two-coach set hauled by Class J11 0-6-0 64301 of Colwick shed. The engines for Leicester (Belgrave Road) shed were supplied by Colwick, which wisely concentrated on handy 'maids of all work', even for so-called expresses. On the journey to Bottesford from Nottingham, I had seen a short goods working from the 'Joint' emerging at Saxondale Junction behind Class J5 65496; it was a reminder that I knew too little about such workings.

1951

On Saturday 12th May 1951, in the course of a complicated Leicestershire tour, I used the Saturday-only Belgrave Road to Melton Mowbray Local service and picked up the handbills advertising the Whitsun excursions to Skegness and Mablethorpe. The goods yard was busy, and Class J2 65019 shunted noisily. Class J6 0-6-0 64215 was in the shed and 64238 of the same class, tender-first, took our two coaches 'all stations' to Melton. It was sad to notice that the branch stations had not preserved their well-kept appearance of two years previously; nationalisation had won and nobody cared any more.



The 1.55 pm (SO train from Melton to Leicester at John o'Gaunt on 23rd May 1953. Photo: O. H. Prosser

A section of line on which I had not yet travelled was that from Bottesford (East) Junction through Redmile to Stathern Junction, so on 5th July I took advantage of an official engagement in Grantham to beg a lift to Bottesford. Here my intention was to await the 7.35 pm stopping train to Leicester, which had just been restored to the timetable after the cuts caused by the fuel crisis. The booking clerk was most impressed, as it was the first Joint line ticket he had issued that WEEK! I also bought, as a souvenir, a ticket to Redmile as I could not foresee a future for it.

The Duke of Rutland's elaborately-carved waiting room was a neglected mess, the ornate platform-awning had been reduced to two bays and the wartime petrol store sidings seemed to be little used. I was, unsurprisingly, the sole passenger in the two coach set hauled by Class J6 64178 of Peterborough shed, while at Redmile, the guard deposited station stores on the deserted platform and one wondered why. The station closed on 10th September.

At Harby & Stathern I got out and made my way to the island platform where the porter-in-charge sold me a ticket to Bingham Road (closed three days previously) as well as my official ticket to Nottingham, being LNW & GN Jt. No. 010. When I arrived at Nottingham Victoria in the Joint line train, the 6.25 pm from Northampton hauled by Class 2P 4-4-0 40553 of Nottingham shed, the ticket-collector regarded it and me with some unbelief. It was significant that the porter at Harby & Stathern had gone out of his way to praise the local bus service; he, for one, did not expect passengers.

To a Londoner, the published arrangements for railborne holiday traffic in industrial areas were unbelievable. The four-page booklet issued by British Railways for special trains on Saturday 4th August at the start of the Leicester and district holidays, covered both the Central and Belgrave Road stations and listed the advance booking arrangements. Belgrave Road booking office was to open on Sunday 22nd July at 9.00 am and was to remain open every weekday until 9.00 pm. A free regulation ticket would be issued with every travel ticket and would be valid only on the train selected. Passengers were requested to arrive at the station at least half an hour before the train was due to leave; and, to add to the tension, six of the eight trains were given only approximate departure times! The trains were as follows:-

Belgrave Road depart 5.55 am*	arrive 8.25 am Skegness
Belgrave Road depart 6.30 am*	arrive 8.55 am Skegness
Belgrave Road depart 6.50 am*	arrive 9.43 am Mablethorpe
Belgrave Road depart 7.25 am*	arrive 10.06 am Skegness
Belgrave Road depart 7.45 am*	arrive 11.06 am Mablethorpe
Belgrave Road depart 8.20 am	arrive 11.14 am Skegness
Belgrave Road depart 8.40 am	arrive 12.00 noon Mablethorpe
Belgrave Road depart 9.40 am*	arrive 12.12 pm Skegness

*approximate time

The two trains (8.20 and 8.40 am) not labelled as approximate were the usual Summer Saturdays timetabled trains. The monthly return fares were Skegness 23/3d (£1.16) and Mablethorpe 25/2d (£1.26).

I made my way in the afternoon by bicycle to the long bank up from the valley of the River Wreake to Great Dalby, and this favoured spot produced lovely views and also photographs of the returning Grantham express (Class J5 0-6-0 65492 on a two-coach set) the 1.40 pm from Skegness (eleven dirty and miscellaneous compartment coaches behind even dirtier Class J39 0-6-0 64872), and the 1.55 pm from Mablethorpe (a smart eleven coach rake of Gresley vestibuled stock in charge of Class J6 0-6-0 64180). The 4.00 pm Melton-Northampton local was augmented to six coaches with former LMS Class 4P 2-6-4T 42585 in charge.

Two days later, on Bank Holiday Monday, I had to go to London and decided to go via the Joint line. A surprise awaited me on Platform 12 of Nottingham Victoria where the 10.40 am to Northampton was waiting. The three compartment coaches were headed, not by the customary ex-LMS Class 2P or 4F but by Class K2 2-6-0 61763, tender first. The booked 2P had failed but my hope of arriving at Northampton behind an ex-GNR engine did not come to pass. The anxiety of the Victoria station operators was to get rid of this supremely unimportant train as soon as possible on a busy Bank Holiday, so we clattered off punctually through the Parliament Street tunnel on to the Grantham line at Weekday Cross and pulled up at London Road Junction. Here we hindered the passage of Skegness excursions and were shunted between the Up and Down lines until Class 4F 44131 arrived from the Midland shed to take us on. Engines having been changed, we resumed our journey, but not for long. After leaving Radcliffe-on-Trent station we

Class K2 2-6-0 61754 leaving Melton Mowbray (N) with a return train from the East Coast on 23rd August 1958. Photo: P. Groom

turned on to the Joint line at Saxondale Junction and then stopped again.

We were well out of the way of the excursion traffic which passed behind us on the main line, one train comprising a mixture of LMS and GWR stock. Our guard got down and made his way to the adjacent signal box; we had obviously 'missed the road', and with so many sections switched out on the Joint line, we had to wait until Stathern Junction was Clear. The driver called out to him: "What's up Ted?," to which Ted memorably replied "The flier's gone through from the GN". I thought of the summer only, once a day, fast train from Leicester to Grantham that I had photographed on Saturday: two coaches and a goods engine — GN certainly, but "flier"?

On the Joint line, called the "ghost line" by the modern generation of Meltonians, little is left except memories of the past. Eventually, we moved on past Barnstone and the Cement Works and waited at the signal at Stathern Junction, where we had a grandstand view of a Skegness excursion from Leicester, Class J39 0-6-0 64716 and eleven nondescript coaches, all filthy. There was nothing else to be seen for the rest of the trip; as there was no traffic there were no delays either. Bank Holiday chaos meant little to the "ghost line".

1952

The experience of a year ago drew me back to the Joint line for the August Bank Holiday weekend where, once again, eight excursions were advertised to run on the Saturday. I alighted at Bottesford from a Nottingham train, and waited to photograph the down Leicester —

Class 4F 0-6-0 44064 shunting an 'up' goods at Melton Mowbray (N) in June 1955. Photo: P. Groom

Grantham 'flier', which again proved to be Class J5 0-6-0 65492 on its two coach articulated set. There being no train to Melton Mowbray I travelled by bus on the lovely hilltop road through Waltham-in-the-Wolds, and eventually found myself at the deserted North station. I then booked a cheap-day return to Lowesby (ticket No. 002!) and waited for the Saturdays-only all-stations to Leicester. Another Class J5, 65481 appeared on this working, but my hope of dramatic photographs was dashed by a heavy rainstorm.

Lineside exploration was now out of the question, so I got out at John O'Gaunt and in due course saw Class 4P 2-6-4T 42576 draw in on the local train from Market Harborough amid peals of thunder. During a lull in the storm I took refuge in the signal-box, where a relief man was on duty, and from this vantage point saw two up freight workings. They were both short and both had eight-coupled power, 90449 and 48479 respectively, en route for Welham sidings and former LNWR destinations. There seemed little point in prolonging the trip, so I caught the Nottingham train behind Class 2P 40412; at Melton Class J5 65491 was assembling a short pick-up goods for Colwick and its sister 65492 passed us on its return trip to Leicester from Grantham.

Three weeks later, bicycle and sunshine combined in a much more enjoyable outing. The hills are so steep, the woodlands so thick, and the lanes so narrow, that the Leicester branch is often difficult to find, not least when it burrows its way through tunnels. I photographed the Saturdays-only 'stopper' at Lowesby, and then got to the line again at a point where one can see the excursions emerge

More shunting at Melton in 1955, this time Class J5 0-6-0 65498 in February. Photo: P. Groom

Station buildings at Long Clawson & Hose, looking north on 19th June 1952. Photo: Charles Bayes

from Thurnby tunnel and slink through the hills beneath the leafy coverts. First came the Skegness train, a ramshackle affair in charge of a filthy J39, and I noticed how the weedy track with its GN-lettered chairs, sank visibly under the train's weight. The Mablethorpe train, by contrast, comprised a smart Class K2 61751 and vestibuled stock and did not disgrace the high-class landscape. Both trains however, dirty or clean, were half-an-hour late. I was not surprised when a 25 mph speed limit was imposed on the branch.

1953

On Saturday 16th May 1953, an excursion was sponsored by the Stephenson Locomotive Society which contrived in the course of six hours' eccentric wanderings beginning and ending at Derby, to traverse the Joint line from Newark to Scalford

Harbury and Stathern Station on 16th May 1953. Photo: H. C. Casserley

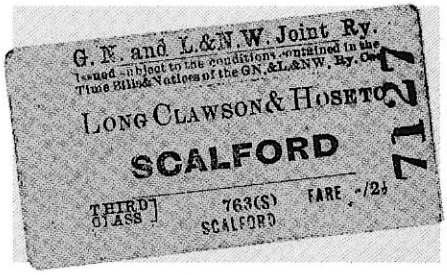
using the through tracks between Bottesford North and South junctions, and then to penetrate the branch to Waltham-in-the-Wolds. From there it was to travel to Holwell sidings on the freight only line from Wycombe Junction.

It was a chance too good to miss. I had indeed already sampled the Newark line four years previously by patronising the evening through train (to Nottingham Victoria via Bottesford North and West junctions) when, with myself the only passenger, Class J6 64213 had lurched and clattered past the gypsum works and the disused station at Cotham with her six ancient, empty Holden coaches.

The Newark branch, like the Leicester branch, was built by the Great Northern Railway alone and normally only nocturnal freight trains used the direct North-South link apart from a rare excursion from Leicester to Doncaster or beyond. Like the rest of the Joint territory it was double-track thoughout.

On this 1953 Special there was the unfamiliarity of modern stock, with post-war LMS-type Class 2 2-6-0 46443 heading four cream-and-crimson vestibuled coaches. At Waltham there was opportunity to alight and see the extension to Eastwell quarries curving away, but not to traverse the timber-trestle bridge at Eaton. For the return, Class 4F 44151 was attached to the front of 46443 at Wycombe Junction because the descent to Holwell (never before used by a passenger train) is so steep that piloting and extra braking were essential. By taking this journey, all the travel possibilities of the Joint line had been covered.

The rest of the year was marked by notices of impending closure to ordinary


G. N. and L.&N.W. Joint Ry.
Issued subject to the conditions contained in the Time Bills & Notices of the GN. & L.&N.W. Ry. Cos.
LONG CLAWSON & HOSE TO
SCALFORD
THIRD CLASS
763(S)
SCALFORD
FARE

passenger traffic of the whole line; and this could have surprised nobody, for by now there was no through train from Leicester to Grantham, Melton Mowbray being the new terminus of the daily train. The 10.47 am from Nottingham was by now the last departure of the day to Northampton, the evening train having been discontinued. On 10th November I photographed the 10.47 am passing Nottingham racecourse, and it seemed that the three coaches were entirely empty.

By 28th November, news had spread and I was not the only passenger doing the trip for sentimental reasons. I travelled as

far as East Norton, the bad condition of whose viaduct was officially given as one of the reasons for line-closure, and the station staff (one woman), let me inspect the ticket-rack and told me that the evening train from Market Harborough would continue to run, though unadvertised, and would in fact go on to Tilton because East Norton had no running-round facilities. This service continued secretly until 1957. On this valedictory trip Class 2P 40464 had rattled along at startling speed; the journey had also produced the rare sight of Class J6 64269 in the bay platform at Scalford, presumably for a trip to Eastwell quarries up the Waltham branch. No. 40464 was also officiating on the following Tuesday when I combined a brief trip from Barnstone to Harby & Stathern (Ticket No. 0035 also valid to Bingham Road [closed]) with the narrow-gauge delights of Eaton quarries.

The final day of ordinary passenger service was Saturday 5th December 1953. I watched the departure of the 10.47 am, the last train to Northampton from Nottingham Victoria; an unfamiliar Class 2P, 40683, left on three rather superior coaches, two of them vestibuled, amid much whistling and camera-clicking. My own act of homage was paid later in the day in the cavernous gloom of Leicester (Belgrave Road) when the 6.10 pm to John O'Gaunt ran its last advertised trip. In fact, the service continued until 1957 as an unadvertised workmen's train, but did not run on Saturdays. On this occasion Class J6 64225 hauled two coaches, one of them an ex-Great Eastern corridor vehicle. At John O'Gaunt, for the last time, there was an official connection for Nottingham Victoria, and a very strange one too, with Derby Compound 4-4-0 41105 in charge of four well-filled vestibuled coaches. Somehow the darkness seemed entirely appropriate; the neglected, secretive Joint line had been discovered a little too late, and one could only marvel that its passenger service had survived so long.

Postscript

Summer excursions continued until 1962 and goods traffic until 1964. In 1954 I photographed the iron-ore goods to Scalford at Eaton Exchange sidings (long disused); the locomotive was Class J5 65486, one of a class confined to the Midlands and particularly associated with all varieties of traffic on the Joint line.

The final years, with B1-hauled Skegness excursions grinding over the weed-sprinkled permanent way, have been well-recorded in the railway press. What my initial journey of August 1948 had enabled me to experience were the dying flickerings of daily timetabled services. Before the onset of World War 2 there had been about sixty passenger trains daily, but it needed no Dr. Beeching to administer the fatal dose.

The last day of the unadvertised 2.35 pm (SO) workmen's service from Market Harborough ran on 18th May 1957 and was specially extended to Tilton. In these views it is seen at East Norton and at Tilton itself, both before and after the engine (Class 4F 0-6-0 44064) had run-round its train. Photos: Ian L. Wright

DMUs to CREWE

Amongst the many first generation BR DMUs, a particularly useful type introduced in 1957 was the series built by the Birmingham Railway Carriage & Wagon Co. for branch line and general local services. They were of low density configuration, had shorter than normal (57ft) underframes and were offered in the form of two- three- or four-car units. They also had distinctively styled cabs with relatively high pitched windows which caused the cream striping of their original green livery to be raised at the front corners, thus adding to their individuality.

These features are well seen in these two views of three-car variants at work in the Crewe area in the pre-'yellow-end' era. In the first picture, taken at Wilmslow in June 1959, one of them forms a Manchester-Crewe local just prior to the energising of the newly installed 25kv overhead wires while in the second picture, taken at Leigh on the former North Staffordshire line between Burton and Stoke, an identical unit, save for the 'speed whiskers' on the front, provides a Derby-Crewe local service on 6th May 1961. Photos: M. S. Welch; J. S. Gilks

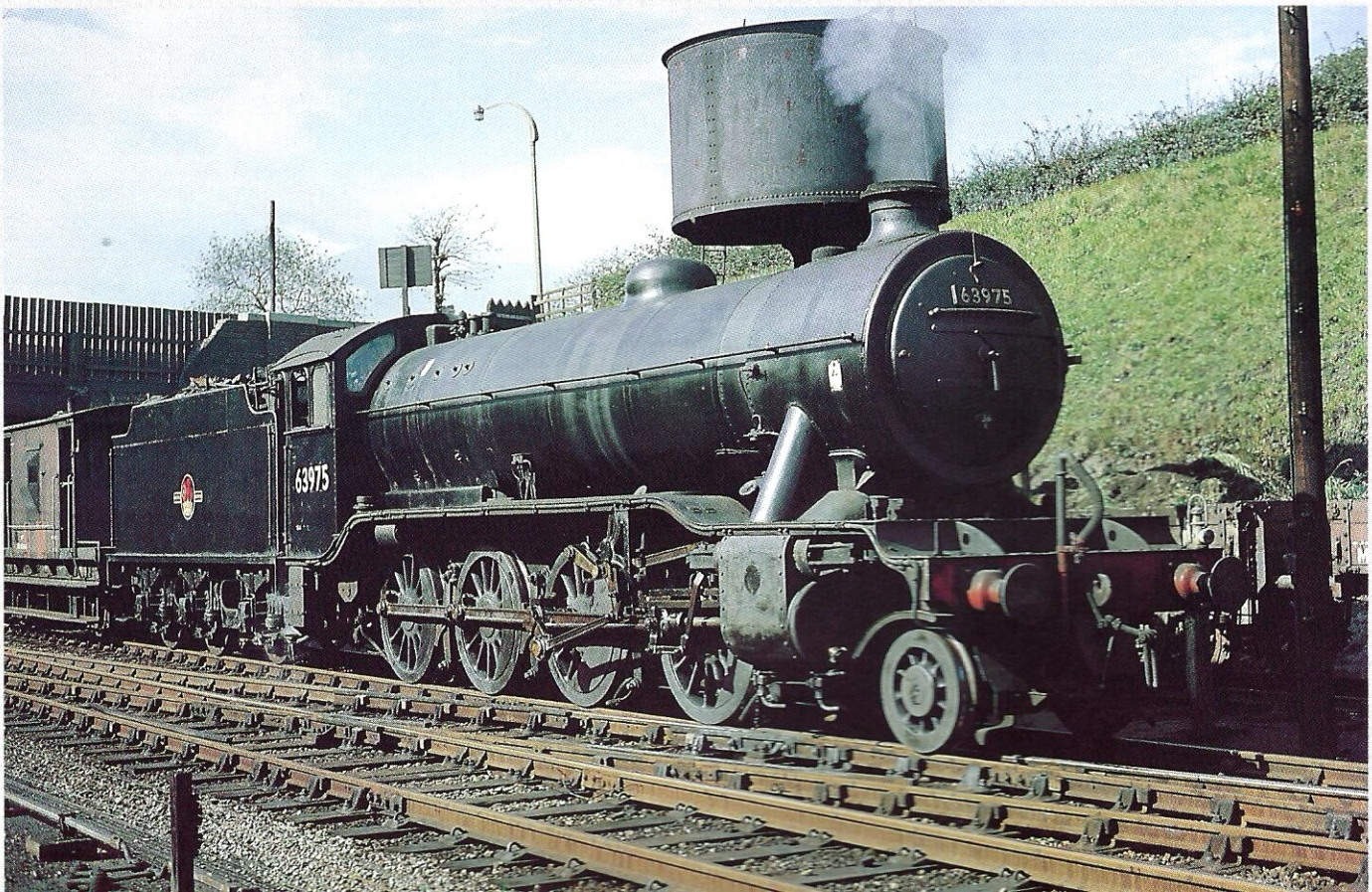
LNER

The Gresley Class O2 2-8-0, in its original GNR prototype form, was significant in being the first of his engines to drive three cylinders with only two sets of valve gear, though not, at first, with the soon to become familiar 2:1 conjugated lever. All examples after the first were given the simpler 2:1 arrangement and in this photo-feature KEITH PIRT analyses some of the variations which had appeared in the class by the end of its working life.

The O2 CLA

ABOVE: This view of 63924 shows a side-window cab locomotive with GN-type tender running light engine ex-works on the former GCR line near Retford crossing in February 1962. Built in 1921 as GNR 479 (LNER Class O2/1) it became LNER 3479 in April 1924 and was rebuilt with the newer type of cab in July 1939. Rebuilt again in October 1943 as Class O2/4 with a Diagram 100A boiler, it became one of the last five O2s at work, being withdrawn from Retford shed in November 1963.

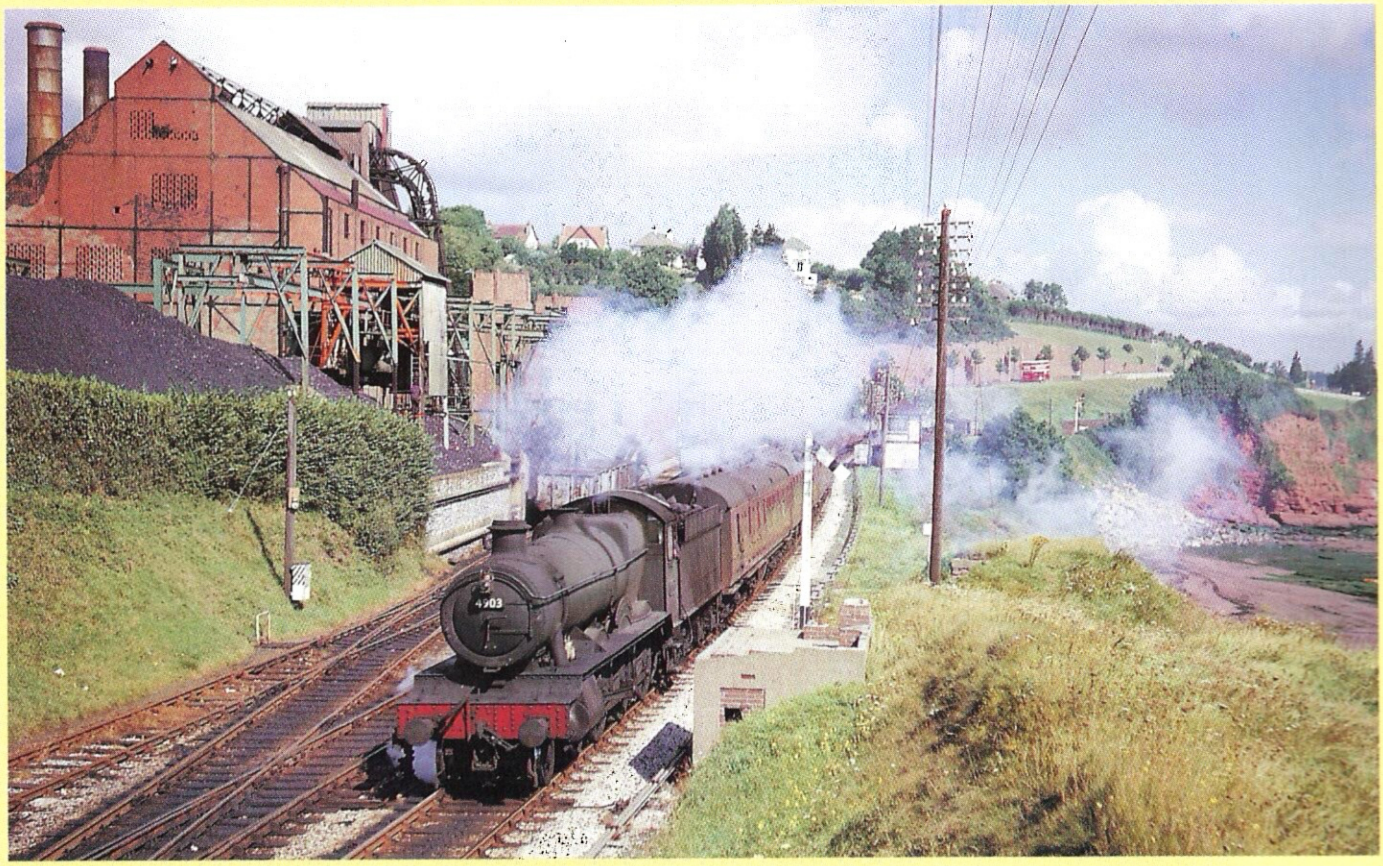
BELOW: Here, standard LNER-built 2-8-0 63975, reboilered to Class O4/4 in July 1962, is seen shunting near Retford Thrumpton in October 1962. The engine was built as LNER Class O2/3 3845 in November 1942 and is now running with a straight-sided LNER group standard 4200 gallon tender formerly paired with a Class D49 4-4-0. No. 63975 was withdrawn in November 1963 as another one of the last five O2s at work.



SS ANALYSED

ABOVE: No. 63940, seen ex-works in Grantham shed yard in August 1962, displays the original GNR pattern cab and tender and is of additional interest in being fitted with single line tablet apparatus for working on the iron ore lines from High Dyke. The engine was built in February 1924 as LNER Class O2/2 495N, the last GNR-numbered 2-8-0; by July 1925 it was LNER 3495. It remained unrebuilt until withdrawn in September 1963.

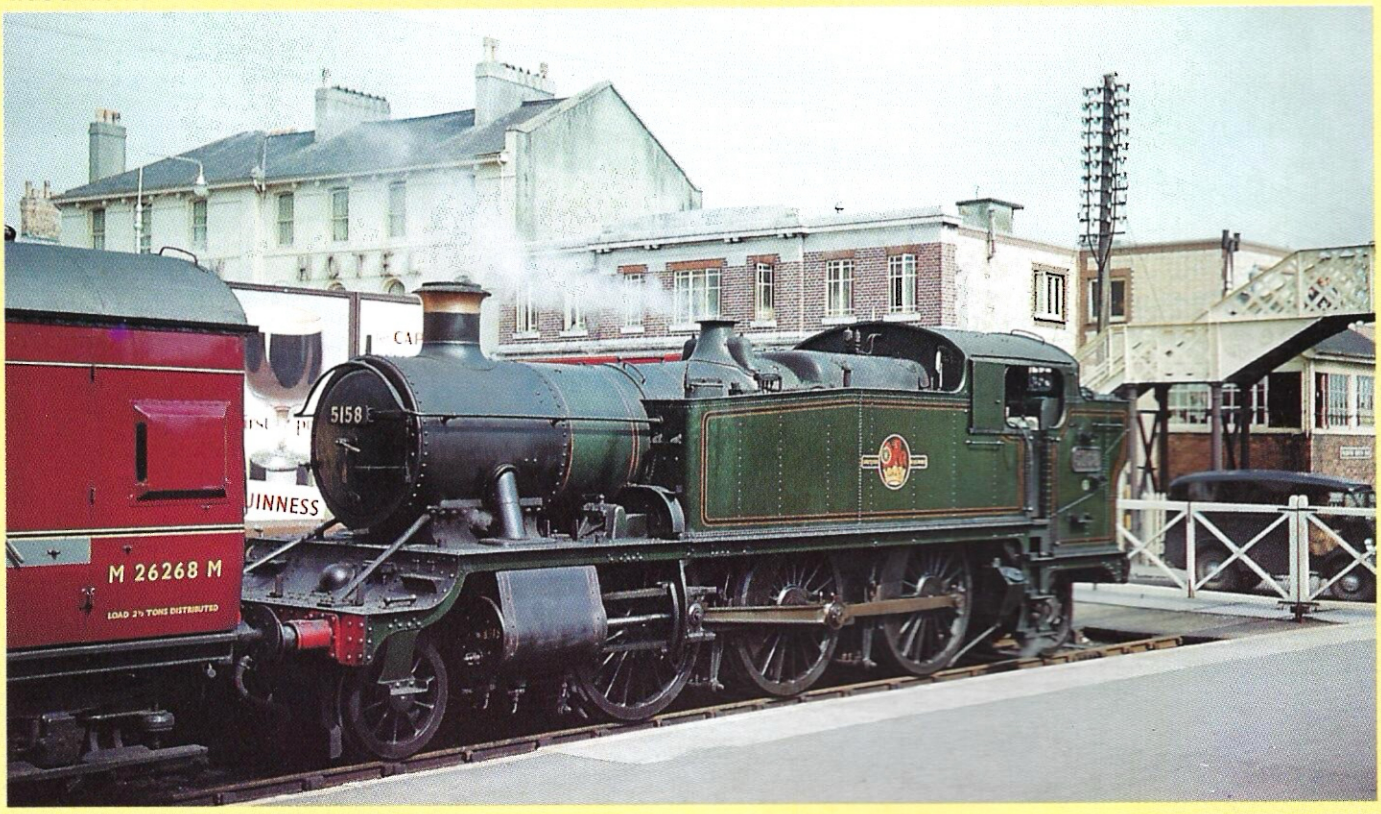
BELOW: Another late variation, represented by 63943, was the combination of GN-type cab on the locomotive with LNER flared-top standard tender in place of the older GNR 3500 gallon type. The replacement tender was received from a withdrawn K3 2-6-0 in May 1962 and the picture was taken outside Grantham shed in August 1962, the engine being recently ex-works. Built as LNER Class O2/2 3498 at Doncaster in March 1924, 63943 was withdrawn in September 1963.



ABOVE: Mid-day on 3rd September 1963 saw 'Hall' Class 4-6-0 4903 *Astley Hall* passing the well-known location at Torquay Gasworks with an Exeter-Kingswear local train. As far as can be seen, the carriages are still of GWR origin but the rather scruffy condition of the engine is all too indicative of impending changes.

Summer o
TORB

BELOW: A few years earlier, on 13th June 1958, 2-6-2T 5158 was altogether more spick and span when waiting for the crossing gates to open at Paignton. The train itself is unrecorded but the first coach, a Stanier-type LMS corridor brake, suggests a possible holiday working from London Midland territory. The larger BR emblem was unusual for this class of locomotive.



ays beside BAY

W. POTTER *recalls the everyday sights to be seen on a famous stretch of the former Great Western Railway a generation or more ago.*

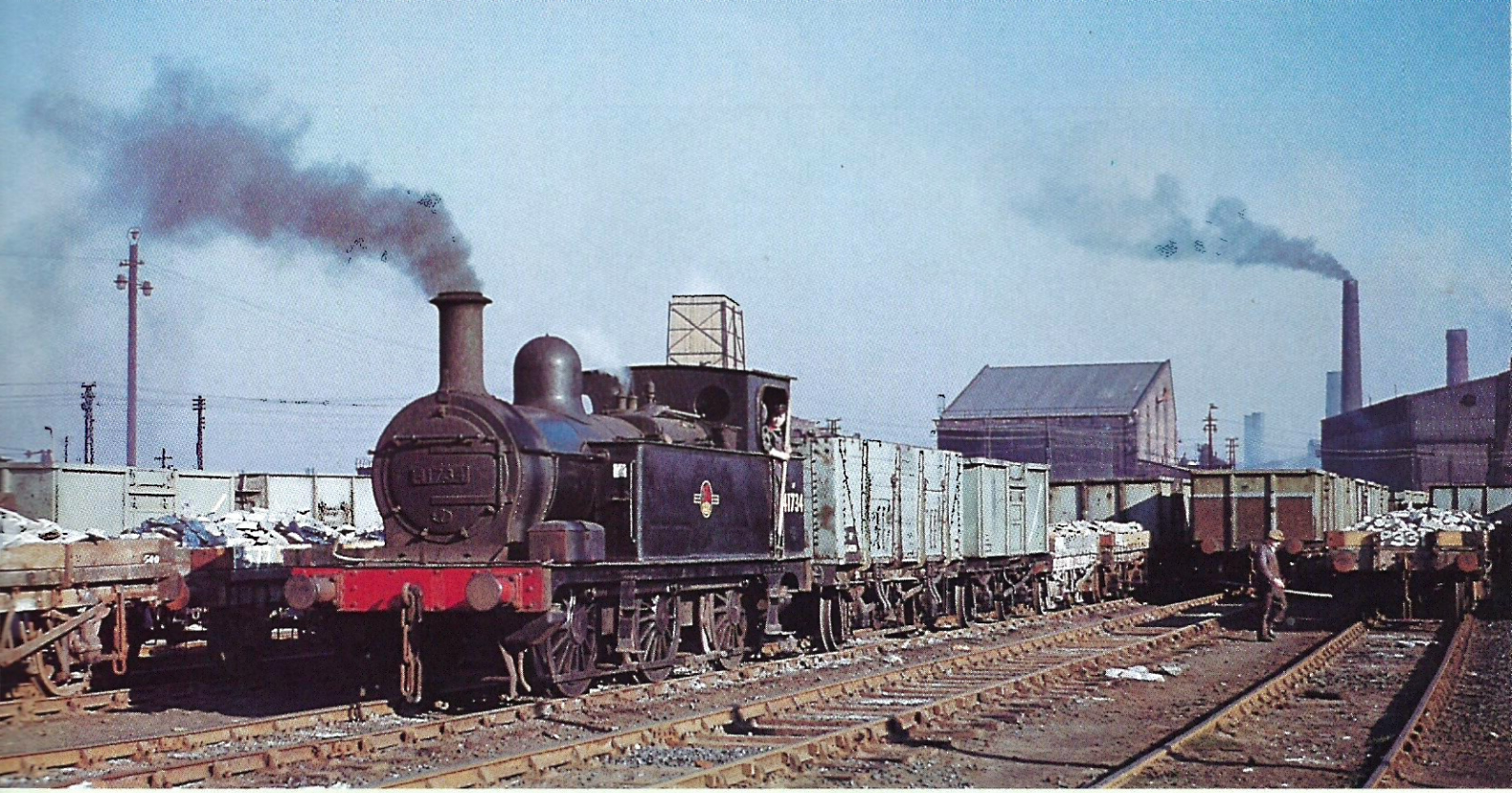
ABOVE: At Churston, junction for the Brixham branch, little had changed from GWR days on 12th September 1957, save for the locomotive and stock liveries. In the left foreground, 0-4-2T 1472 waits in the bay with the Brixham auto-train while on the main line, a Kingswear to Liverpool holiday express, seemingly composed mainly of ex-GWR stock, gets into its stride behind 4-6-0 6814 *Enborne Grange* **and a bunker-first 2-6-2T 5178.**

BELOW: Journey's end: Kingswear terminus on 27th June 1961. On the left, 6841 *Marlas Grange* **simmers away quietly as 4984** *Albrighton Hall* **enters the station with an unidentified train. Brunel's timber train shed can be seen in the distance.**

RIGHT: **Oakham Level Crossing signal box of 1899 vintage was in the County of Rutland when photographed in September 1970; it still is according to the view of many inhabitants of the area, though parliamentary abolition of the county name would have you think differently. This characteristic MR structure on the Leicester-Peterborough line contains a 17-lever frame and the line it serves is one of the more interesting cross-country routes in the Midlands.** Photo: R. C. Riley

BELOW: **The Class 4F 0-6-0 was the final design of Midland goods engine and though 44414 was actually built by the LMS, it looked hardly any different from its Midland predecessors. This ex-works view at Derby was taken on 30th September 1962, but apart from the BR livery, little of real significance had been changed from its LMS condition.** Photo: Raymond Reed

ON MIDLAND



ABOVE: Genuinely Midland: Class 1F 0-6-0T 41734 shunting at Staveley Ironworks on 5th March 1961. Built in 1884 this engine survived until December 1966 when it was withdrawn along with the other four remaining MR 0-6-0Ts and two 0-4-0Ts. They had not actually been steamed since October 1965 and their withdrawal marked not only the last of the MR fleet but also the last pre-Stanier design LMS locomotives of any type. The long survival of the MR examples was owed to a Midland agreement of 1866 accepting responsibility for providing engines to shunt Staveley Ironworks for one hundred years. Photo: R. C. Riley

BELOW: By the time BR standard locomotives and stock had taken over on the main line, surviving Midland evidence was sometimes more subtle as here at Wellingborough on 24th March 1962, where Britannia Class 7MT 4-6-2 70043 *Lord Kitchener* **heads south with an express of BR standard stock. The water column on the left is still quite obviously Midland, but typical too of the old Midland Railway is the single slip plus trailing crossover track arrangement being traversed by the first and second carriages of the train. By now, however, the track itself has become a mixture of old-fashioned bull-head and modern flat-bottomed.** Photo: P. J. Fitton

LINES

Like the GWR, the Midland was another company which, though it vanished even earlier, had put its unmistakeable stamp onto so much which it owned that even in the 1960s and later, there were still many signs to be seen.

ABOVE: **The Lyme Regis branch as many will remember it: Whit Tuesday 1959. Adams '0415' Class 4-4-2T 30582, built by Robert Stephenson & Co. in 1885, has just arrived at the terminus and the passengers are leaving the station with a half-mile trek to the town centre ahead of them.** Photos: K. R. Pirt/K. R. Photographics

BELOW: **In May 1959, radial tanks 30582 and 30583 double head a Saturday afternoon 'through' train, so called because some of the coaches would have been detached from the main line train from London at Axminster and added to the normal branch set. The train is on a 1:40 gradient emerging from a cutting, having just passed under a small bridge near Hartgrove Farm, not far from Combpyne.**

AXM
LYME

The 12.40 pm from Axminster was composed of a pair of Mansell SR coaches on 18th June 1960 and hauled by 4-4-2T 30583.
Photo: Peter W. Gray

INSTER and REGIS LIGHT RAILWAY

P. MAUGHAN *describes the rise and decline of one of SW England's most beautiful and popular branch lines.*

History and Building of the Line

Lyme Regis was typical of many branch lines in the South West of England in its complex pre-construction history, in that an endless procession of schemes were fought over and lost when the little resort, afraid of economic stagnation, struggled to become connected to the national network. The Axminster & Lyme Regis Light Railway was finally opened on 24th August 1903, the first proposal for a railway line being in 1845, almost 60 years earlier.

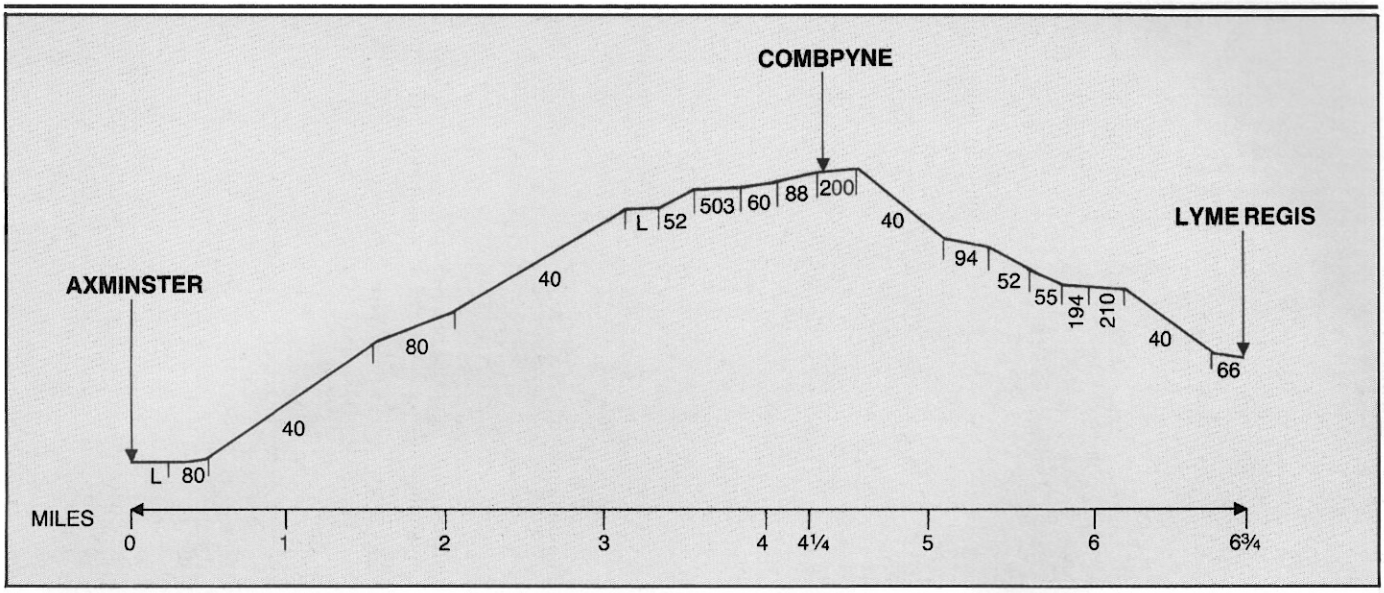
In the early 1870s the LSWR was ready to support proposals for a branch line, but only really in order to keep out the GWR; as soon as this objective had been achieved the LSWR showed little further interest. In fact, the LSWR effectively 'killed' proposals for a line on three occasions, once in the 1860s (together with the GWR) and twice in the 1880s. However, in 1871 the LSWR was actually persuaded to agree to work a line (if one could be constructed) and the Bill for a Lyme Regis Railway Company to connect with the LSWR was passed by Parliament in the summer of 1871. Optimism was such that plans were deposited with Parliament for an extension of the line from Lyme to Bridport but nothing more became of this and the nearest Lyme Regis came to gaining its longed for railway was in 1874 when matters advanced as far as a sod cutting ceremony. To the local inhabitants' dismay, however, nothing further ensued and to the LSWR's satisfaction, the powers lapsed.

In 1898 a petition containing nearly 2,000 signatures was once again ignored and it took the involvement of a local public figure, Sir Wilfred Peek, to persuade the LSWR to agree to the construction of the new line.

The local townsfolk felt that, at last, they had something to cheer about and that the LSWR would finally be forced into action. This indeed proved to be the case and under the Axminster & Lyme Regis Light Railway Order of 15th June 1899, powers were granted for a line to be built from Axminster to a site about a half mile from the Lyme Regis town centre. Messrs Baldry and Yerburgh of Westminster were appointed by the promoters to build the line, having tended at something over £35,000. Mr Arthur C. Pain was appointed Engineer.

Construction of the railway began in June 1900 and the LSWR subscribed £25,000. Difficulties were experienced in the work (much of the heavier material was carried by sea and landed at Lyme Regis) and an extension of the Light Railway Order was required.

The Cannington Viaduct was the only major engineering structure along the line. The contractor employed to build the viaduct was 'Concrete Bob' McAlpine and it was his next job following the Mallaig extension civil engineering works. It was situated South of Combpyne and Combpyne was to be the only intermediate station on the line.



Construction of the Cannington Valley concrete railway viaduct consisted of 10 elliptical arches of 50 feet span: its total length being 600 ft, width over spandrels 16 ft, maximum height to rail level 92 ft and gradient 1:80. With the exception of concrete blocks in the vertical faces of the arches, the construction was of concrete mix. This consisted of crushed flints and Portland cement, the crushing yielding sufficient grit to make the addition of sand unnecessary. The concrete was hand-mixed and, for transporting this and other materials, a cableway of 1,000 feet span was erected across the valley, supported either side by two wooden pylons.

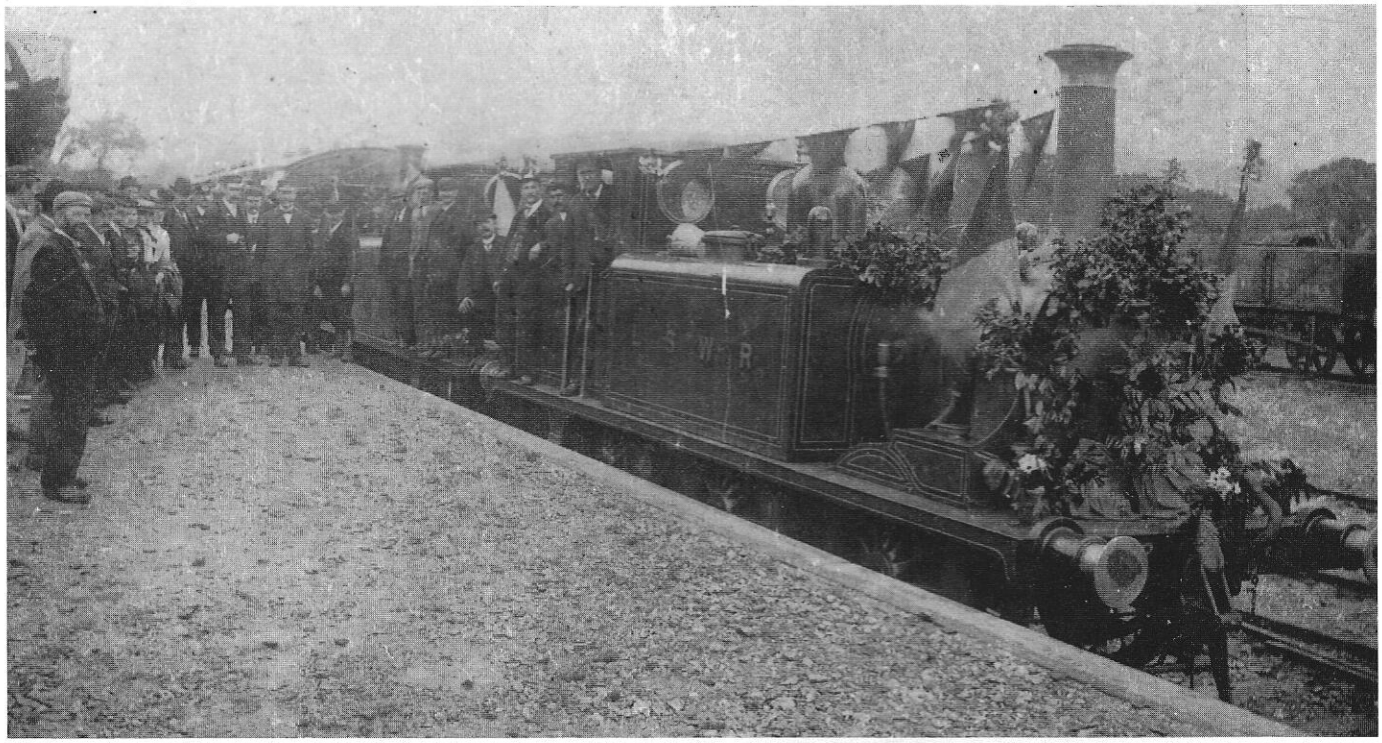
The piers were built without scaffolding and some settlement occurred owing to the fact that the viaduct was built on greensand and blue lias clay. The foundations, originally designed for a pressure of 3½ tons per square foot, had to be enlarged to give pressures ranging from 1½ tons to 3 tons per square foot and a remedial 'Jack Arch' was built in the third span to strengthen the viaduct following earth slippages (affecting the West abutment and first pier worse than elsewhere). The track formation was built up to partly compensate for the settlement. In the early years a flagman was posted at each end of the viaduct to keep watch on its stability. There has been no movement reported in the subsequent 80 years.

At Lyme Regis, the station building was a timber structure; there was, however, no Station Master's house. There were alterations to the station in 1930: the platform was lengthened to cope with summer Saturday 5-coach trains and, owing to alterations in the track plan layout in the earlier years, the goods shed was moved to another position.

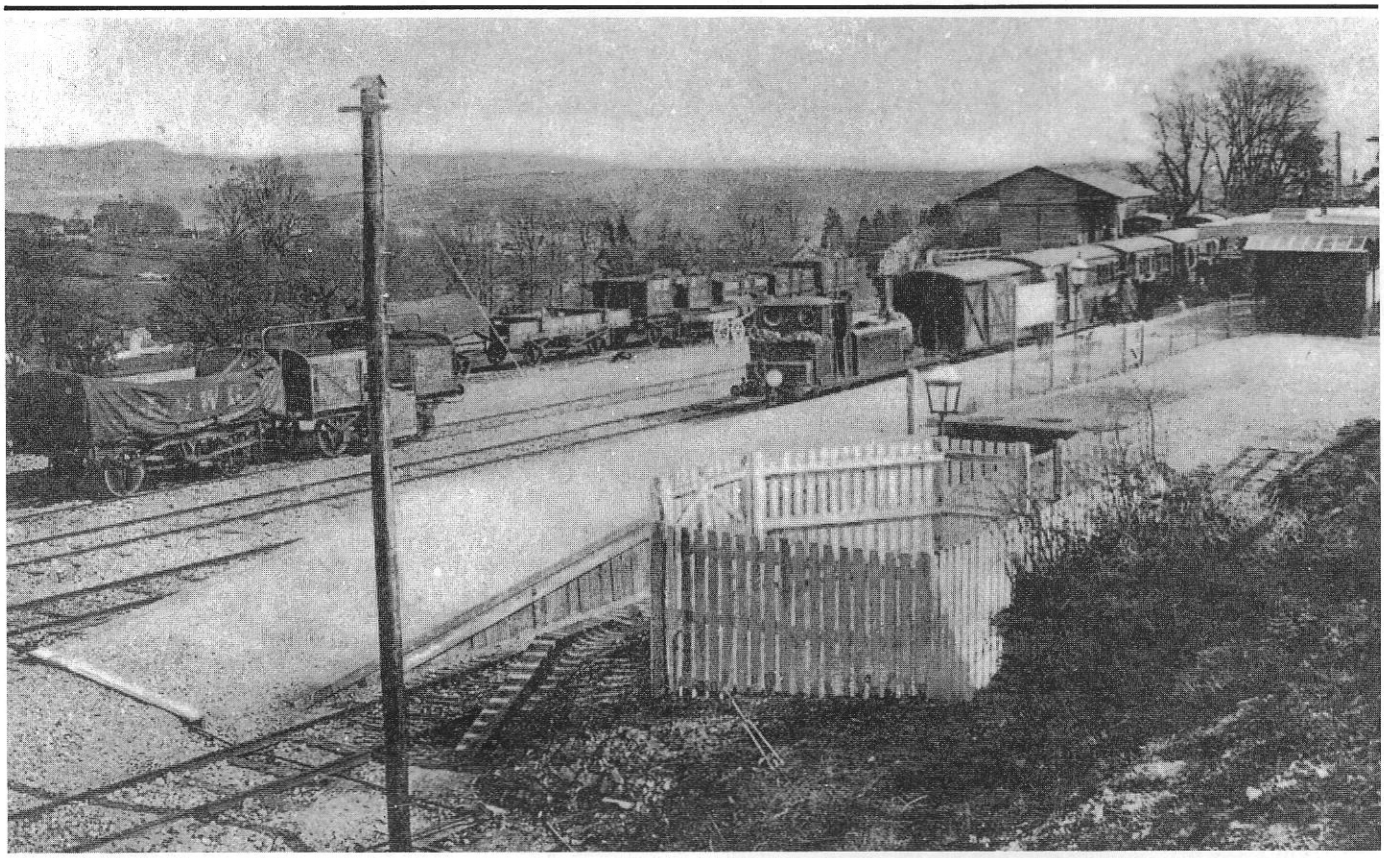
The original engine shed was also built of wood. This building was destroyed by fire on the 28th December 1912 and only swift action by the staff saved the locomotive inside from being seriously damaged. A new engine shed was built of asbestos over a steel frame at a cost of £400.

The signal box at Lyme was of typical LSWR design and was more or less identical to the one at Combpyne. The starting signal was an LSWR lattice type lower quadrant signal. In the 1950s an upper quadrant arm was fitted.

Combpyne Station was very isolated: 2½ miles from Lyme Regis, 4¼ miles from Axminster and even ¾ mile from the small village of Combpyne itself. The platform was bare and without shelter, although facilities at the station building were good. In addition to the Station Master's residence and the ticket office, it also had a waiting room and ladies' and gentlemen's toilets. The buildings, however, were rather remote from the platform. Prior to 1930, there was a signal box situated by the ramp at the Lyme end of Combpyne platform; also two loop lines ran round the other side of the platform and very short sidings ran off both ends of one. A cattle pen was situated next to one of the sidings and there was also a loading gauge. In 1930 the signal box was removed and sold to nearby Hook farm to be used firstly as a corn store and then as a chicken coop while the Northern points were removed converting the run round loop into a long siding. The 1930 alterations also included new



Lyme Regis station on opening day, 24th August 1903.
Photo: Author's collection



Lyme Regis, October 1903, with one of the line's 'Terrier' tanks waiting with a mixed train for Axminster.
Photo: Author's collection

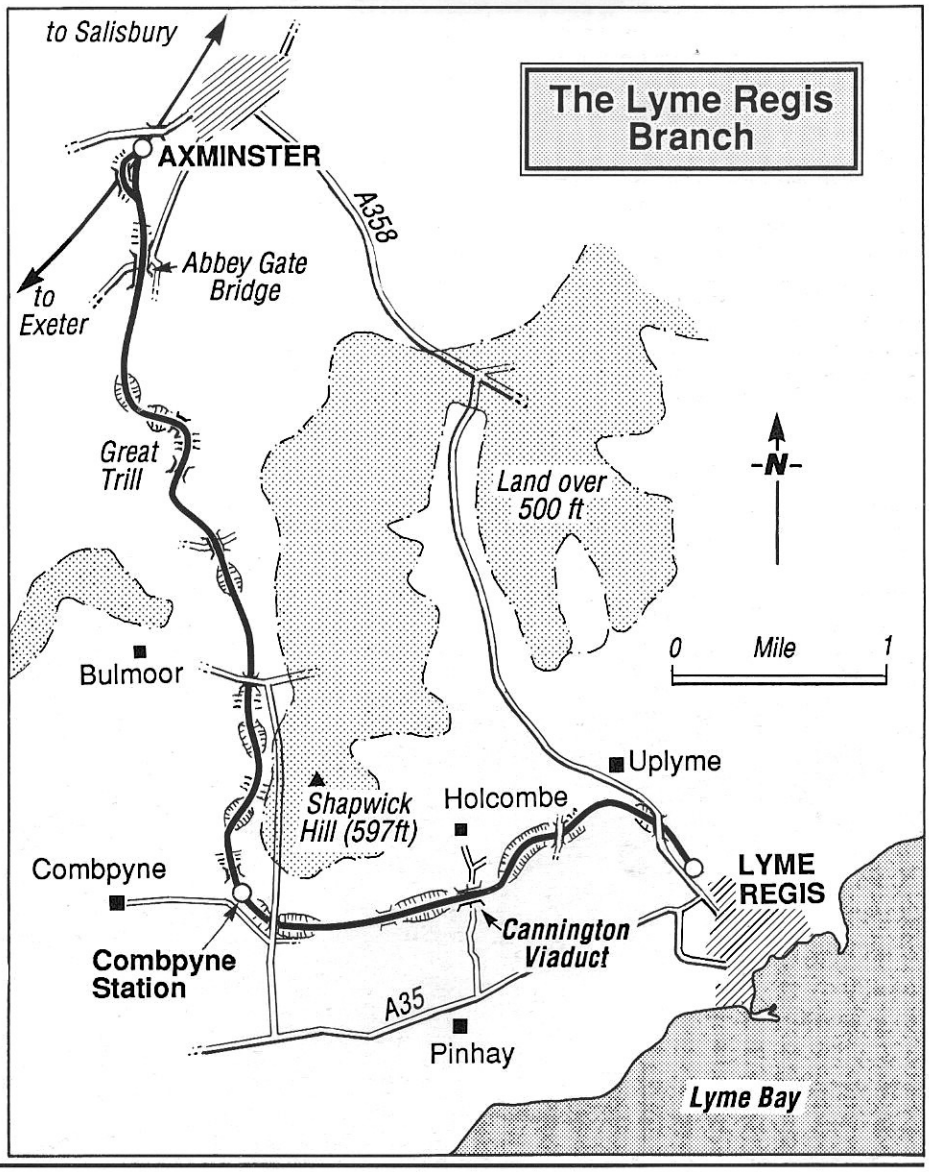
platform facings in concrete from the Exmouth Junction works.

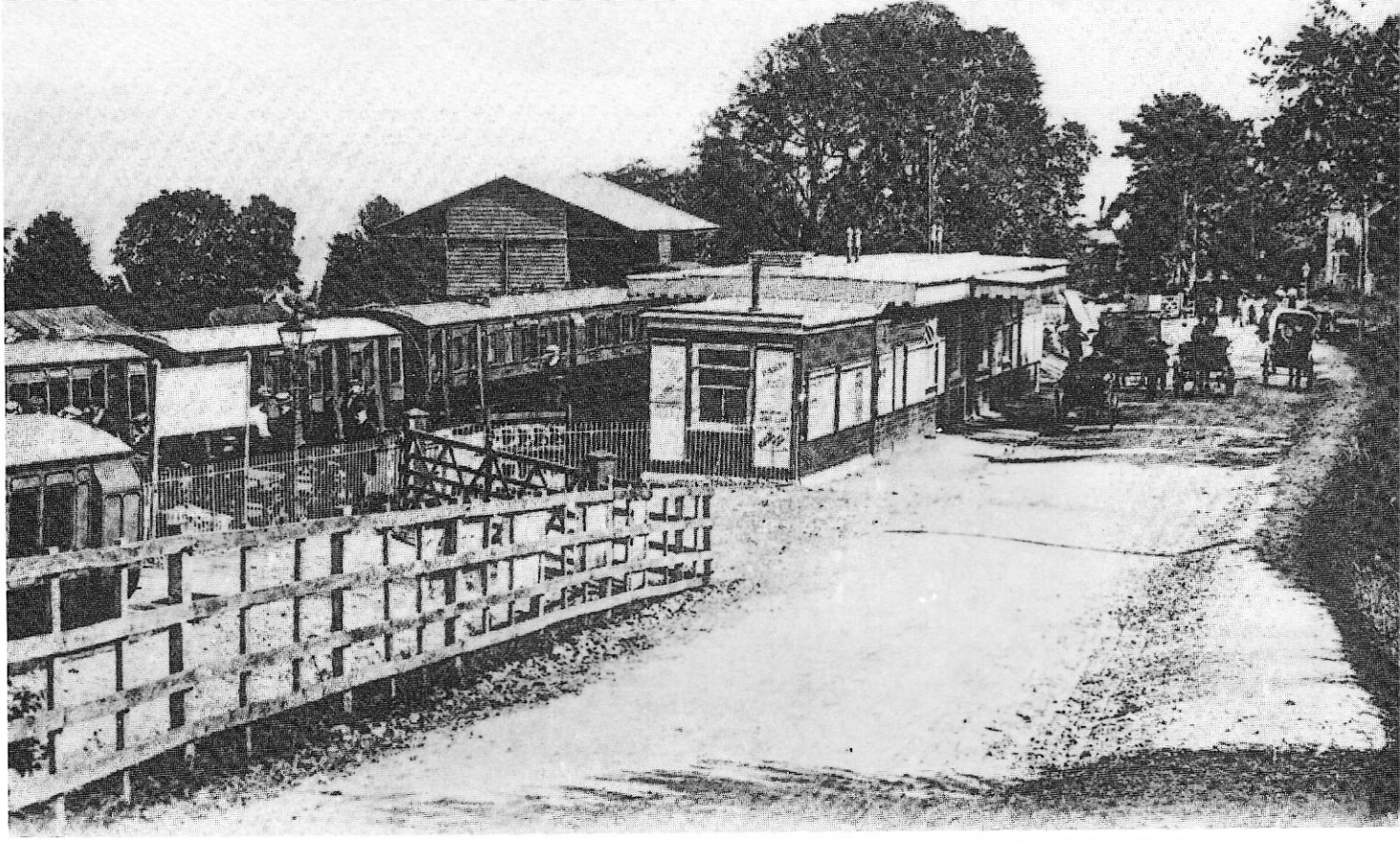
The downgrading in 1930 enabled the SR to staff the station with only a porter, ending the posts of Station Master and signalman. The signal box was replaced by a ground frame operated by a key from train staff.

Moving now to Axminster on the Waterloo to Exeter Central Main Line, the Lyme branch bay was situated alongside the 'up' platform of Axminster Station. This meant the passengers had to use the footbridge to gain access to the branch train. Unlike the 'down' platform, there was no canopy to protect the passengers waiting for the Lyme Regis train from getting soaked in bad weather. There was a small coal stage at the very end of the branch bay, also a water column and a water tank with a massive chimney that for many years served a steam engine used to power a pump to extract water from the nearby River Axe.

The branch line was built on a 1:80 climb out of Axminster on a sharp curve to an iron girder bridge, built to carry the branch over the main line. There was a run round loop at the branch bay, a starter signal just off the end of the platform and a branch home signal on the curved embankment just out of Axminster.

There used to be a direct connection from the goods yard at Axminster to the branch but with two ground frames and a 1:40 gradient this was considered inconvenient, staff preferring to shunt across the main line from the branch bay. The trailing connection was therefore removed on the 5th September 1915.





A busy day at Lyme Regis, c.1905. Of interest is the loose-gravelled road, the volume of horse-drawn traffic and the mixture of coaching stock in the platform and bay. Photo: Author's collection

A special train ran on 22nd January 1903, but the actual opening of the line was delayed due to movement in some of the earthworks. Major Druitt of the Board of Trade inspected the works on 21st August and eventually expressed his approval. Amid general rejoicing (the usual band playing, toasts, speeches &c.) the line was opened three days later on Monday 24th August 1903.

The initial euphoria was sadly misplaced, as business, although sufficient to put the Lyme Regis to Axminster horse bus (which had operated from about 1880) out of business, was not a runaway success, resulting in financial difficulties; thus on 1st January 1907, the Company was entirely absorbed by the LSWR. Things improved generally after this with agricultural goods such as fertilisers and livestock, together with coal stuffs, providing useful business. Holiday excursions also proved very popular.

The line eventually became part of the Southern Railway on 1st January 1923 and then, on 1st January 1948, it became part of the Southern Region of British Railways. Transferred to the Western Region in 1963, it was finally closed on 29th November 1965.

Following a period of dereliction, the wooden station building of Lyme Regis was removed by the Mid-Hants Railway in 1979 and rebuilt at Alresford as a book and model shop.

Geography and Description of the Route

The branch line from Axminster (East Devon) to Lyme Regis (Dorset) was 6¾ miles long, whereas the direct distance between the two towns was only 4 miles, the line being built as a light railway on a very winding and sharply curved route, with very steep gradients (as much as 1:40) quickly winding away from the lowland area of the axe Valley through some of the

LSWR Class '02' 0-4-4T 184 prepares to depart from Lyme Regis at an unknown date in Edwardian times. Photo: Author's collection

most beautiful scenery in Southern England. At one point a train travelling to Lyme Regis would be facing East but, within a further half mile, it would be facing West. It was the serious operational limitations on the line that ensured the survival of the 0415 Class 4-4-2 Adams Radial Tank locomotives. Other classes had been tried on the line, only to be defeated by the sharp curves and gradients.

After the 1:80 climb out of Axminster, gradients got steeper at 1:40. The line went over the Axminster-Seaton Road at Abbey Gate Bridge, winding its way over the severely curved embankment of an area called Great Trill, then climbing through richly wooded country. At this point there would be superb woodland views with carpets of bluebells and primroses on the banks and cuttings in spring and early summer, making it a joy to travel on this line. After this, the line snaked its way through the woods near Bulmoor Cross. There were 27 curves of 30 chains or less and many more less severe not far from this point.

There was an overbridge which carried a small lane near Hartgrove Farm, this being one of only two bridges on this section of the route, the other being the occupation bridge near Trill. Now, not far to the only intermediate station at Combpyne at Milepost 3, the line levelled from 1:40 for a quarter mile, followed again by steep gradients, the track cutting into the hillside in an area called Edge Hill. There were steep wooded slopes on one side of the line.

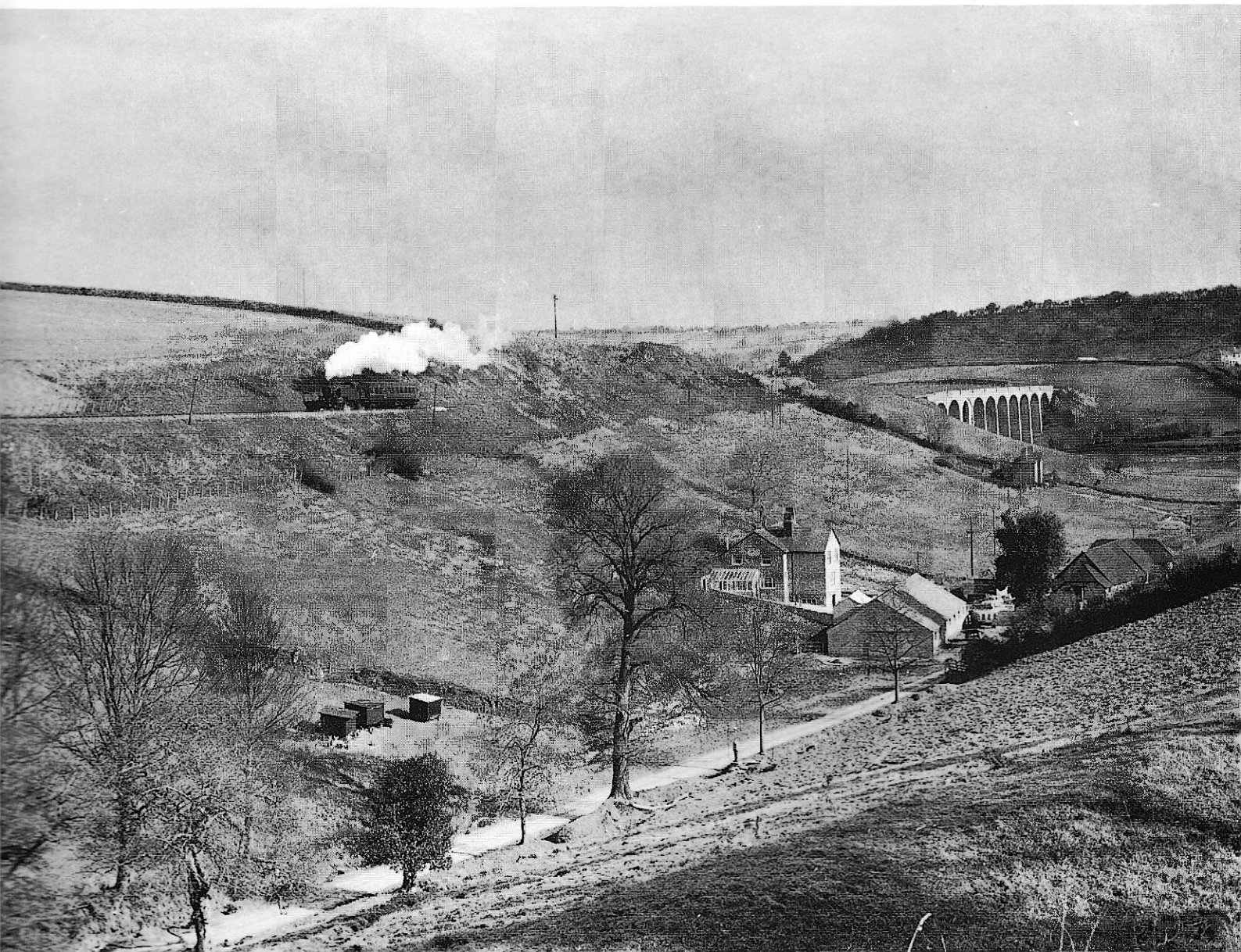
On reaching Combpyne Hill, the incline eased from 1:88 to 1:200 at Combpyne Station. The summit of the line was a little further East, just beyond Combpyne Platform, 470 ft above sea level. The line then dropped away sharply after this, passing under the Rousdon Axminster Bridge through a cutting at 1:40, almost to Cannington Viaduct. Earthworks had been necessarily extensive in the area with deposits of greensand, chalk and clay giving unstable cuttings. The route from a North-South axis as far as Combpyne then headed East. Shapwick Grange Farm was situated here in open countryside and downland, after which the line reached the Cannington Valley, the gradient easing to 1:80 over the Cannington Viaduct. The main valley here ran North before curving South to the sea. Because of this, the viaduct had to be built here.

The viaduct was 5 miles 21 chains from Axminster, and from the viaduct, the line wound its way towards the village of Uplyme at a gradient of 1:55, passing under a small bridge which carried a lane to Uplyme. Hook Farm was close by and very near to here the railway was carried over an iron girder bridge at Uplyme where the gradient was 1:40. The line was now very near Lyme Regis and went through a cutting passing under a road bridge carrying the main road to the town of Lyme. At this point the line passed from Devon into Dorset where the gradient eased at 1:66 for the last ¼ mile, passing the home signal, engine shed and sidings into the terminus of Lyme Regis, inconveniently situated a half mile from the centre of Lyme Regis and 250 ft above sea level. The scenery here was also superb with a view from the station of the chain of hills surrounding the town — no point of which is less than 450 feet above sea level — and a delightful view of Lyme Bay itself.

Locomotives and Rolling Stock

The combination of steep gradients and very sharp curves defeated the classes of locomotives first used on the line: ex-LBSCR 'Terriers' 734 and 735 (646 *Newington* and 668 *Clapham*, respectively) which arrived in time for the opening day ceremonies on the 24th August 1903. Hard working on the tight curves overtaxed the little 0-6-0Ts which had to run with tanks half full to avoid exceeding the limited axle weight of 12 tons. In 1907 they were replaced by Adams '02' 0-4-4Ts. Despite reduced weight &c., including partly filled tanks, the problems were the same: strained frames, excessive flange wear and steam and water leaks. The answer was to

(Below and overleaf)
These pictures were both taken on 27th February 1965 when a mixture of LMS and GWR design equipment formed the Lyme Regis Branch train: Ivatt LMS type Class 2 2-6-2T 41216 plus GWR pattern auto-coach.



Adams radial tank 30583 leaves Combpyne on 11th May 1957 with the 5.10 pm from Lyme Regis to Axminster. Photo: Peter W. Gray

find a locomotive for the unusual conditions of the Lyme Regis route.

In 1913 it was decided to try an Adams '0415' Class 4-4-2T 0125, built by Robert Stephenson in 1885. This engine proved an outstanding success, despite its age. The '0415' Class proved ideal with a short wheelbase and guiding wheels at either end and were known as 'radial' tanks because they had a radial trailing axle. Although they did have small side tanks, most of their water supply was carried in a well tank beneath the bunker. The first of them was soon joined by two others of the class but as the withdrawal of the 1920s proceeded these two went and Adams Radial 0520, built by Dübs & Co. in 1885, became 0125's partner on the branch. From 1926 these two engines had the line more or less to themselves and survived an attempt around 1930 to replace them with ex-LBSCR 'D1' Class 0-4-2Ts. When these latter engines proved unsuccessful, the Adams Radials were recalled after major overhauls. The engines became 3125 and 3520 in the 1930s.

The two Adams Radial Tanks continued to work the branch on a 'one week on, one week off' basis. The engine in use was stabled at Lyme Regis shed during the week, being relieved on Saturdays by the other engine travelling out from the main depot at Exmouth Junction. This arrangement was fine until one of the pair had to go to Eastleigh Works for an overhaul when the stand in locomotive was usually an Adams '02' 0-4-4T. The real solution would be a third radial tank. Matters came to a head in 1946 when both 3125 and 3520 required major overhauls. The Southern Railway therefore purchased from the East Kent Railway an engine that had been derelict since 1939: EKR No 5, an Adams Radial built by Neilsons in 1885. The engine was sent to Eastleigh Works where the estimated cost of the reconditioning and overhaul, plus the

The views were taken a few hours apart but in each case the train is seen bound for Axminster, climbing towards Combpyne, having just crossed the celebrated Cannington viaduct. Photos: Peter W. Gray

fitting of the spare Drummond boiler, was reckoned at £1,500. The engine was taken into SR stock on 13ih August 1946 as 3488. Completion of the overhaul was on 30th November 1946, after which the engine made its appearance on the Lyme branch, painted in wartime plain black livery with sunshine lettering. By the time of the next overhaul in October 1949, the locomotive was the property of British Railways Southern Region along with the other two radial tanks, being renumbered 30582 (ex-3125), 30583 (ex-3488) and 30584 (ex-3520).

The increase in holiday traffic kept these engines very busy. There were 'through' London coaches which were attached to the branch set, which often meant five or six coach formations on the branch on Saturdays and Bank Holidays, requiring double heading. The relieving engine travelled up from Exmouth Junction in the morning and the two engines double-headed many of the day's workings. The three Adams Radials used on the branch were the only survivors of this class to go into BR ownership, 71 having been originally built. One would return from the branch to Exmouth Junction shed every Saturday for maintenance and boiler washout.

Lyme Regis branch train in the bay at Axminster on 20th June 1958 in charge of 4-4-2T 30583. The picture was taken from the 5.52 pm to Exeter Central.
Photo: Peter W. Gray

Later on 18th June 1960, see page 173, 30583 was in double harness with 30584 as they headed the 1.55 pm from Axminster (carrying through coaches from Waterloo).
Photo: Peter W. Gray

The coaching stock used on the line was of former LSWR non-corridor composite type until 1958 while the 'through' coaches were usually of Bulleid design. Branch line coaches were more varied after this, consisting of Maunsell corridors built in 1930, plus an ancient ex-SECR ten compartment non-corridor second (built in 1921) and a relatively modern BR standard non-corridor second class coach; one coach usually sufficed in winter but as many as three were required in the summertime. A camping coach, for years a feature at Combpyne, stood at the end of the long siding. In the late 1940s and early 1950s, an ex-LCDR coach was provided for letting to holiday makers. This camping coach was rather small and was later replaced by a larger camping coach, an ex-LSWR

composite. This, like the previous camping coach, had no heating or water. All the water for Combpyne was supplied from Lyme Regis in milk churns. The camping coach was returned to Eastleigh each winter for maintenance.

The Easternmost siding at Lyme Regis, which was officially named the 'Carriage Siding', contained a redundant ex-LNWR 12-wheeled sleeping car. This was used by locomotive crews overnight on summer weekends; previously they had to sleep in the good office!

Former GWR '1400' Class 0-4-2T, 1462, was sent for trials on the branch line on 12th November 1958; it failed miserably. Another attempt to replace the aged radials was tried in September 1960, this time an Ivatt 2-6-2T of LMS design, 41297, and it proved a success. Similar tests followed for sister engine 41308 and in January 1961 '0415' Class No 30584 was withdrawn. Prior to the regular service of the Ivatt 2-6-2Ts some track relaying had taken place and in July 1961, '0415' Class 30582 and 30583 were also withdrawn.

The Ivatt 2-6-2Ts remained on the branch line for less than 2½ years and in 1963, when the Western Region took over the Southern West of Salisbury (including the branch lines), these locomotives were replaced by diesel multiple units. Regular steam operation ceased on the 4th November 1963 but DMU shortage gave rise to the re-appearance of two Ivatt 2-6-2Ts (41216 and 41223) early in 1965. Double heading of the through trains had ceased with the withdrawal of the Adams '0415' class; the Ivatt 2-6-2Ts made light work of them unassisted and they ceased when the Western Region took over in 1963.

A few more steam locomotives made brief appearances on the line prior to closure, including an ex-GWR 14XX 0-4-2T with a Western push-pull set. After this, single railcars were introduced in March 1965, operating to the closure of the line on 29th November 1965.

Finally, regarding the fate of the three Adams Radials, 30582 was scrapped in 1962, 30584 was scrapped in 1961 and 30583, the engine in the best condition, was saved for preservation, due to the fact that it had undergone a general overhaul in February 1959, receiving its original Adams boiler and still retaining the old frames and single slide bar. In July 1961 the engine was sold to the Bluebell Railway and regained its original number 488. There it remains as one of the most historically important preserved steam locomotives outside the National Collection.

Passenger and Goods Services

The Axminster & Lyme Regis Light Railway offered six return journeys, increased to eight when the LSWR took control of the line in 1907. By 1908 there were nine trains each way daily: five solely for passengers, two for goods trains only, the remainder being mixed. The maximum speed permitted on the line was 25 mph, the speed limit being imposed because the line was built to light railway standards only; while running time was 21 minutes for the 6¾ miles.

Traffic steadily increased in Southern Railway days until 1938 when there were eleven return journeys in summer. A Sunday branch service was set up in 1930 with the frequency of the service ranging from six to eleven return train journeys through the 1930s. These incredible summer peaks in the train service to Lyme Regis were never achieved again, except for a brief period after the second World War. A regular service throughout the week was maintained in the second World War and nine weekday return journeys per day were made after 1951 until closure of the line. The winter Sunday service ceased after 1951 but the summer Sunday service ranged from eight to eleven trips each way.

Goods traffic was never very heavy on this line, mainly consisting of coal, fertiliser and building materials. General merchandise arrived mixed in vans or sheeted wagons in the latter years leading up to the withdrawal in February 1964 of goods services on the line. A single mixed train was more than enough to cope with the dwindling freight.

The procedure for shunting incoming goods trains to Lyme Regis was to stop outside the station, detach the engine and coaches (if it was a mixed train) and gravitate the wagons into the appropriate goods siding.

Now, sadly, this is all just a memory.

References:

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2. *LSWR Stock Book:* Peter Cooper — Kingfisher Railway Productions 1986.
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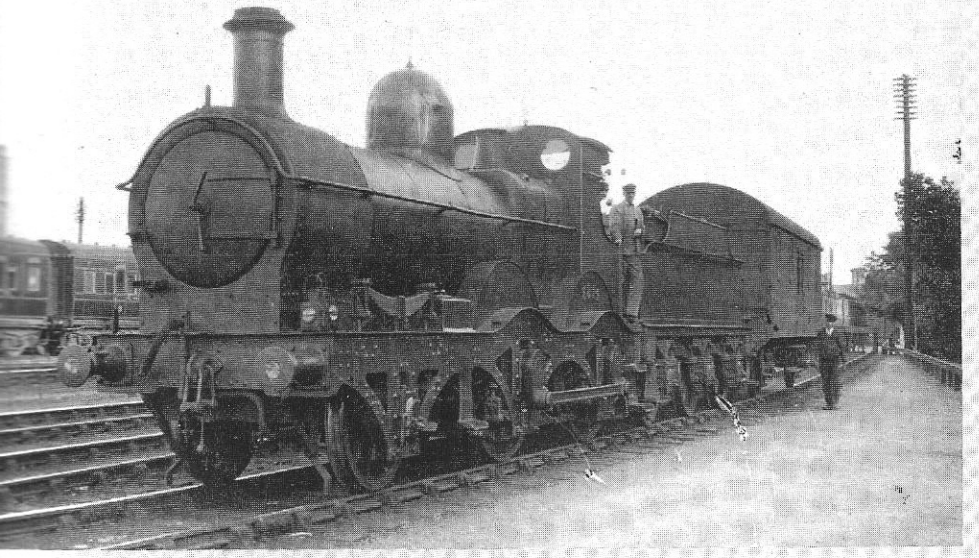
The Southern West of Salisbury: Terry Gough — Oxford Publishing Company 1984.

Axminster again, this time on 2nd November 1963 with a Class 2 2-6-2T 41320 on Lyme Regis branch duty and unrebuilt Bulleid 4-6-2 34030 *Watersmeet* **on a main line local train.** Photo: Peter W. Gray

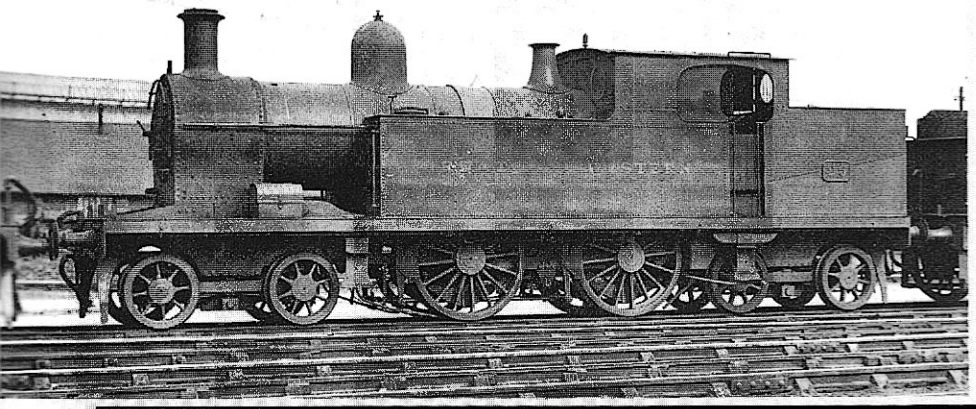


'Barnum' 2-4-0 3214 shunting coaching stock at Shrewsbury. This loco was a regular performer on the Severn Valley line before its withdrawal in April 1931.
Photo: Author's collection

Wooden Bridge

For those who have often wondered precisely which engines worked in what areas, **STANFORD JACOBS** *draws on his early notes to provide a fascinating glimpse of activity around Kidderminster more than half a century ago: a location which nowadays is far better known for its preserved steam.*

M&SWJ 4-4-4 tank 17 in virtually original condition as GWR 25.
Photo: H. C. Casserley



Recently, my thoughts were turned back some 50 years by the discovery of a slim black covered notebook at the back of a drawer. Inside, written in an unformed schoolboyish hand, in pencil and barely legible, was a record of locomotives working through Kidderminster in the early 1930s. Our favourite location to observe the workings was a black iron footbridge, over which a path, connecting the Chester Road with Hoo Road, still goes: the bridge crosses the line at the mid point of Kidderminster Yard and was invariably referred to as the "Wooden Bridge".

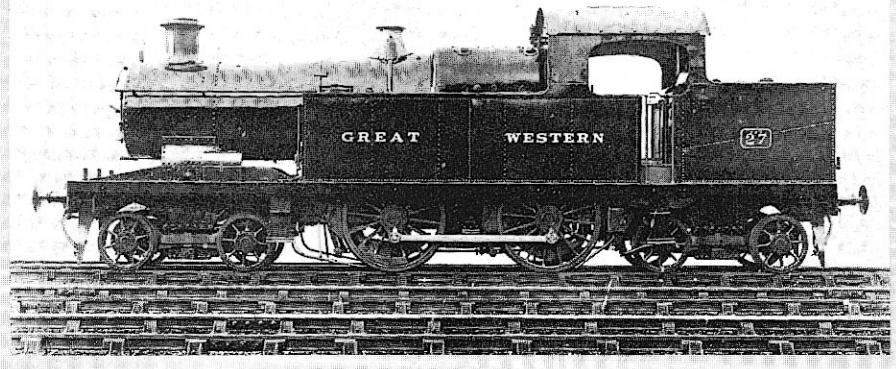
This was a splendid place to watch trains as there was always something going on: shunting in the yard, main line trains or trains to the branch to Bewdley, the Severn Valley or Tenbury lines, or the push and pull set — always referred to as the 'motor train' — reversing at Bewdley to provide a service to Stourport and Hartlebury round the triangle. To the South, there was a splendid view to the Hoobrook viaduct and beyond, with the distinctive humps of the Malvern Hills visible on a clear day; the steam of an approaching Down train could be seen for over a mile. On the North side, trains became visible as they rounded the curve into the station and came under the Comberton Road bridge; while branch trains announced their arrival by three short blasts on the whistle before swinging under the Hoo Road bridge and curving alongside the sidings on the Down side.

A further attraction of the Wooden Bridge was that Kidderminster Junction signal box was adjacent to the steps on the East side of the bridge. Even on cold days, when the windows were closed, it was usually possible to hear the block bells from the Station box and from Bewdley South, but a gong was used from Hartlebury Junction and this could only be heard in the summer when the windows were open! The signalman would normally deliver the token for branch trains from the box, but would come down the steps to collect the token from a train coming from Bewdley.

There was a connection from the Bewdley Branch directly into the goods yard. This was used by freights from Tenbury and the Severn Valley and also by trip trains from the yard to the British Sugar Corporation's factory at Foley Park. These trains were propelled from Kidderminster and required a token to be withdrawn by the Junction signalman; there was an intermediate token instrument at Foley Park and, once the trip train was safely inside, normal working could be resumed. The other unusual feature of the layout was that there was no down starting signal; if it was necessary to instruct the driver verbally, the train had to be stopped at the box by a red flag.

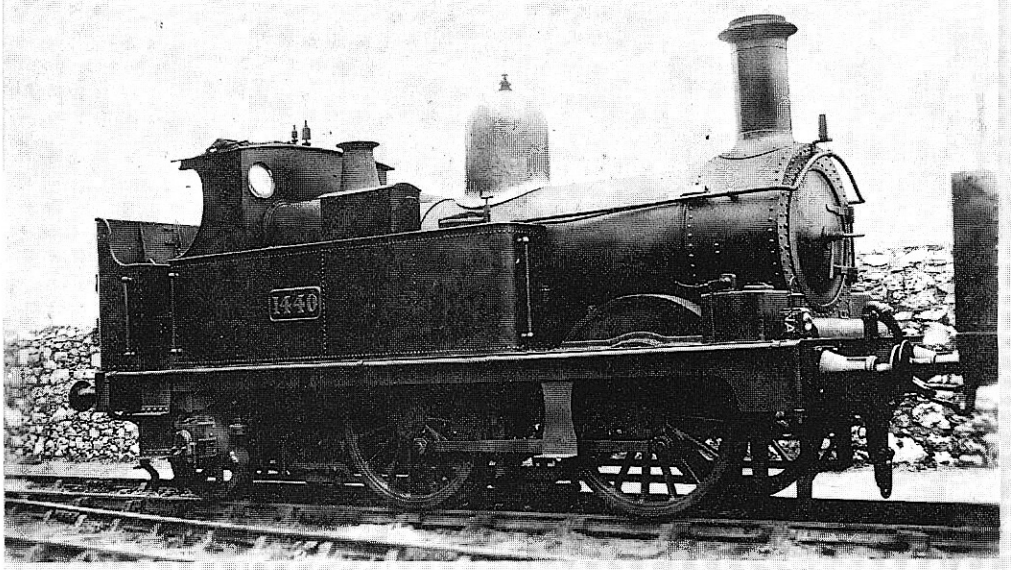
In those days, the railway enthusiast was an unusual and rare person. There were no printed reference books and lists had to be written out laboriously by hand. Even more difficult was the problem of allocations and transfers and it was not until I discovered the RCTS at the beginning of 1935 that I had access to this vital information. Meanwhile, a few of us had managed to work out the home sheds of most of the workings through Kidderminster.

In the early 1930s, the usual locomotives on the passenger turns were "Bulldog" Class 4-4-0s. These worked the so-called 'Birmingham and South Wales



M&SWJ 4-4-4 tank 18, rebuilt as GWR 27. This loco was allocated to Kidderminster after rebuilding, working suburban trains to Birmingham in the mid-1920s. Photo: Author's collection

GWR 0-4-2T 1440 was a standard Wolverhampton product originally introduced in 1868 and built, with various modifications, over the next 17 years, until 156 of them were in service. No. 1442 was of the same batch as 1440. Photo: Author's collection



Expresses' via Stourbridge Junction, Kidderminster, Worcester, Hereford and Pontypool Road. These were usually four coaches only and, although the coaches had boards bearing the legend above, they seemed to stop a great deal for so called expresses. They were worked by Tyseley and Hereford sheds; while Worcester contributed further Bulldogs on stopping trains between Shrub Hill and Wolverhampton. Locomotives which spring to mind from this period, are as follows:-

Tyseley: 3321 *Brasenose*, 3371 *Sir Massey Lopes*, 3403 *Trinidad*, 3410 *Columbia*, 3417 *Mildmay of Flete*, 3426 (unnamed) and 3450 *Peacock*.

Hereford: 3308 (originally *Falmouth*), 3333 *Perseus*, 3337 *The Wolf*, 3349 *Lyonesse*, 3351 *One and All*, 3362 *Albert Brassey*, 3370 *Sir John Llewelyn*, 3373 *Sir William Henry*, 3388 (originally *Swansea*), 3402 *Jamaica*, 3409 *Queensland*.

Worcester: 3318 *Vulcan*, 3339 *Sedgemoor*, 3353 *Pershore Plum* (originally *Plymouth*), 3368 *Sir Ernest Palmer*, 3377 (originally *Penzance*), 3394 *Albany*, 3414 *Sir Edward Elgar*, 3418 *Sir Arthur Yorke*, 3428 (unnamed), 3449 *Nightingale*.

Some of the Bulldogs in the list never carried names — 3426 and 3428 were examples of this. Those locos with the name shown in brackets had had their names removed in the late 1920s. They all had geographical place names, and the story was put out that dear old ladies had mistaken the locomotive name for the destination of the train! Some of the Duke class also suffered in this way.

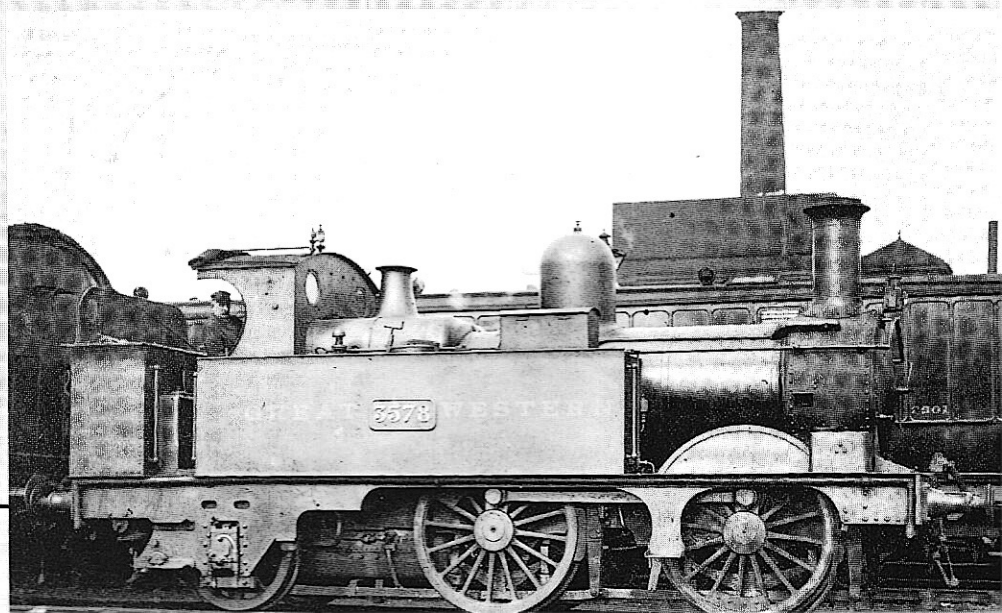
I was informed by another local enthusiast, much older than myself, that every Bulldog of the 156 in the class had worked through Kidderminster at one time or another; other types of Great Western 4-4-0s were much rarer. I only saw one of the 6ft 8in inside cylinder 'Badminton/ Atbara' Class 4-4-0s pass through Kidderminster: this was the pioneer 4100 (formerly *Badminton*). I understand that they were regular visitors in the 1920s when Stafford Road shed had regular turns to Oxford via Worcester. The outside cylinder 'Counties' were not unknown and, in fact, the last trip of a County in revenue service took place on 28th December 1932 when 3834 *County of Somerset* worked the 3.50 pm from Birmingham Snow Hill to Hereford and the corresponding return working.

Other GWR passenger engines were extremely rare visitors in the early 1930s. Once a year, Worcestershire Cricket Club played a match at the Chester Road ground, and this gave us an excellent opportunity to combine cricket and locomotive watching. On one hot Saturday afternoon, there was an unscheduled train on the Up line: a ballast train from Llynclys quarries, with an Oswestry 'Duke' (3264 *Trevethick*) hauling it. This was unprecedented, but better was to follow when a Down excursion came through with 4061 *Glastonbury Abbey* on the front end. Later on, '43XX' Class Moguls began to appear on the South Wales expresses — 6377 springs to mind as a typical example — and these, in turn, were replaced by 'Halls' from the Tyseley end and two 'Saints' — 2945 *Madresfield Court* and 2946 *Langford Court* on the Hereford turns.

Main line freight was quite heavy with regular workings from Pontypool Road to Oxley Sidings. There were two regular turns passing Kidderminster on the down line at 11.45 am and 12.15 pm. The normal engines on these turns were '28XX' Class 2-8-0s or ex-ROD 2-8-0s from either of the two sheds at the ends of the run. Occasionally, Aberdare 2-6-0s would be used on these trains. Other main line freights were in the hands of the 5 ft 8 in Moguls.

In the early 1930s, the GWR, ever publicity conscious, named most of their overnight express fitted freights. One of these was the 8.20 pm Kidderminster-Paddington, which was known as the

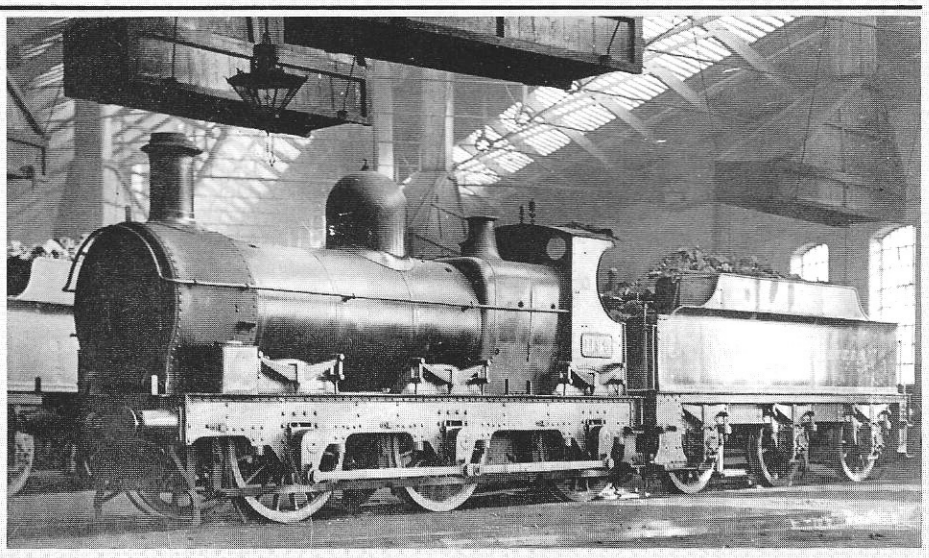
No. 3578 was one of the last 0-4-2Ts turned out of Wolverhampton Works in 1895; most of them were used between Chester and Birkenhead. This one is no exception as there is an ex-LNW coach in the background. Photo: H. C. Casserley



"Carpet". The locomotive for this, invariably a Paddington Hall, used to work in on a stopping train from Stourbridge at about 7.10 pm and then take the empty stock down to the Junction and back the coaches into the up carriage sidings. It waited there until just after 8.00 pm when the yard shunter had finished making up the train. The Hall would come under the Wooden Bridge, back up into the yard, blow up the brakes, and pull out slowly on to the up main with anything up to 45 box vans filled with the town's staple products. I never discovered the return working; it must have taken place overnight for the empty vans to be positioned in the large goods shed and for the vacuum fitted brake van to be ready for the next evening's working.

It was, however, the branch workings which provided the greatest variety of locomotive power. The Severn Valley was used as a kind of 'home' for obsolescent motive power and the last two 5 ft 2 in outside framed 4-4-0s ended their days on that line. Improbably, 3557 and 3559 had started life on the broad gauge, as 0-4-2 convertible saddle tanks. As such, their riding was extremely suspect, especially over the Cornish main line. The last of the batch — 3560 — was turned out with a short wheelbase trailing bogie and the remainder of the 3541-3560 batch were altered in the final year before the abolition of the broad gauge in 1892. The riding troubles were finally solved by turning the whole locomotive round and they duly appeared from Swindon as small 4-4-0s for branch line working. Even then, there were two distinct varieties: 3557 had a domed boiler while 3559 had a domeless taper boiler and looked rather like a small wheel version of a Bulldog. No. 3559 was a Worcester engine, while 3557 was at Kidderminster.

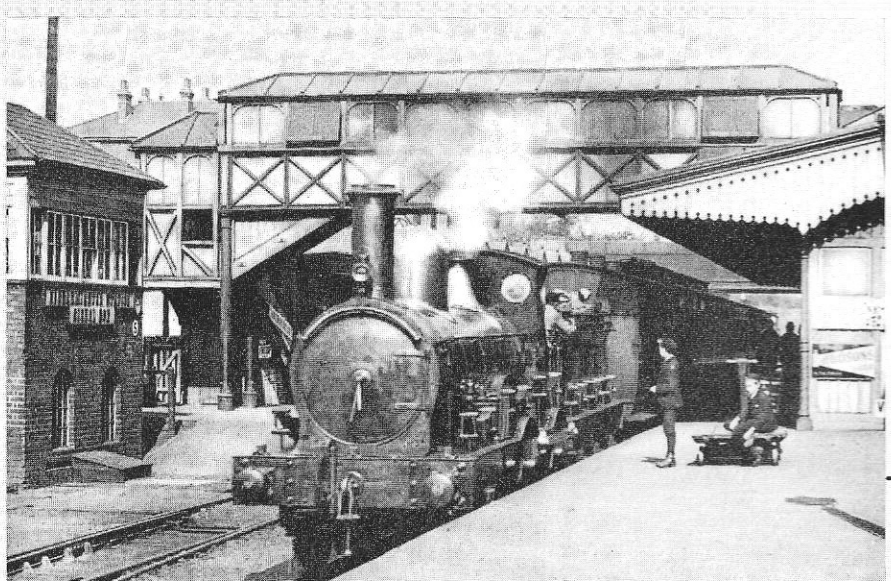
From the Shrewsbury end, one of the favourite engines was a 'Barnum' type 2-4-0 — 3214. There appears to be some discrepancy as to whether it was at Stourbridge or at Salop in the early 1930s; but it was certainly working on the Severn Valley at this time and I have a photograph of it shunting coaches at Salop. It used to appear from the branch at about 2.40 pm and, after running round its train and transferring its three coaches to the Up platform, it waited until 4.08 pm before going out, tender first, to Hartlebury. The wait of an hour in the platform was a wonderful opportunity for a small boy to study the controls of a steam locomotive and the first footplate that I ever mounted was this same 3214. After arrival at Hartlebury, it worked back to Salop via Stourport.



Armstrong goods 1195 was the last survivor of a very numerous class found all over the system. No. 363, mentioned in the text, was very similar but a member of a small class produced immediately before the first of the Standard Goods, as the Armstrongs were known. The photograph is believed to have been taken at Oxley. Photo: H. C. Casserley

Other passenger workings to Bewdley quite often had Dean 0-6-0s as their motive power. In the early 1930s, the carpet factories in Kidderminster worked on Saturday mornings, finishing at 11.45 am and in order to return the workers to their homes, there was a train at 12.10 pm to Bewdley, normally worked by a Dean 0-6-0 from Worcester shed. The engine would arrive light from Worcester and pick up two coaches out of the Up siding. One Saturday morning, the locomotive turned out to be 2400 of St. Philip's Marsh shed; this was unheard of and there was considerable surprise amongst the locals. However, it proved to be a transfer to Worcester and became very common in the next few years.

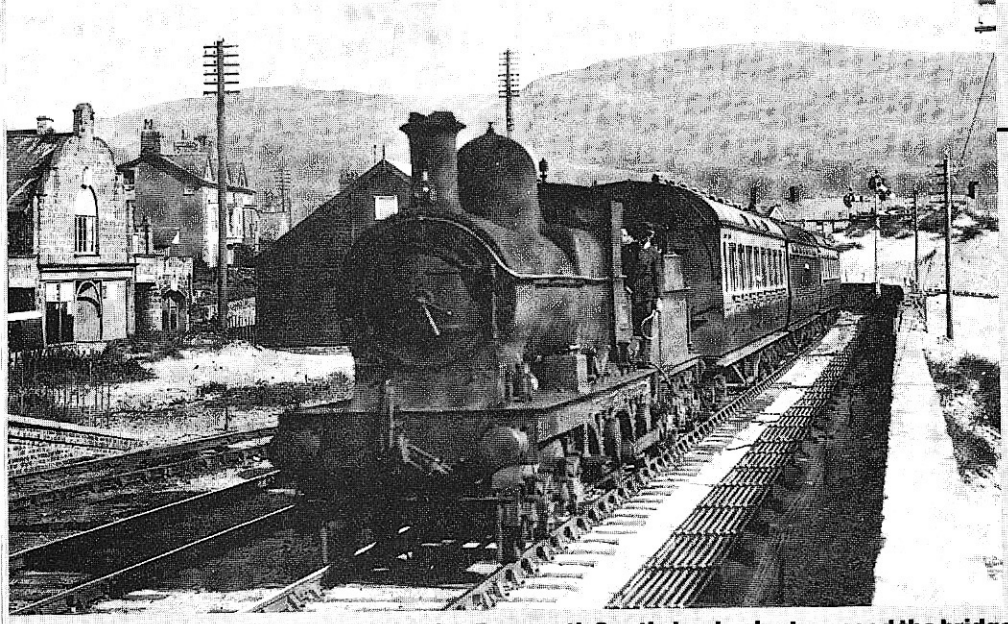
The South end of Kidderminster station. Although the postcard states that the scene was taken about 1880, there is reason to suppose that this date is rather early, and that a more likely date is towards the end of the 1880s. The Locomotive is probably one of the West Midland rebuilds — 178, 180 or 181. The bridge carrying Comberton Rd. over the line can be seen behind the footbridge, while the signal box survived unchanged except for a standard GW cast iron name board until its final closure. Photo: Kidderminster Art Gallery and Museum



The other services on the branch were the trains to Tenbury and Woofferton and the local auto or push and pull trains round the Kidderminster-Bewdley-Hartlebury triangle. There was a Woofferton train which used to arrive at about 4.55 pm; this was worked by a 2-4-0 tank stationed at Ludlow, which was a sub-shed of Salop. The usual loco was a Dean 'Metro' tank — 3562 — but on one occasion, an unusual tank came in on this turn. This was No. 5 — an outside framed 2-4-0T built at Wolverhampton at the end of the 1860s. This particular engine had an open cab and, as there never was a turntable locally, the crew would have had an exposed ride back to Woofferton up the long climb to Cleobury Mortimer through the Wyre Forest.

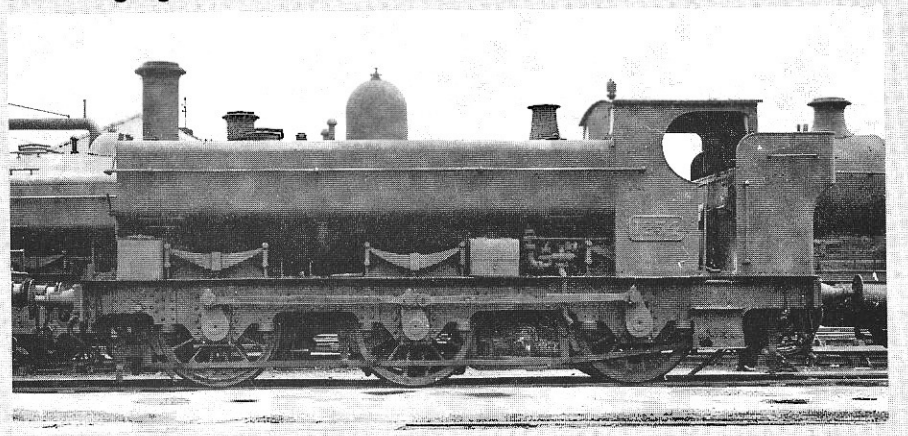
Cleobury Mortimer was the junction for the Cleobury Mortimer and Ditton Priors Light Railway. Opened in 1908, primarily for the stone traffic from the quarries on Brown Clee, the passenger service survived until 1938. The two original locos — Manning Wardle 0-6-0 outside cylinder saddle tanks — became 28 and 29 on the GWR at the 1923 grouping. No. 29 soon disappeared to Swindon and re-appeared as a small wheeled 0-6-0 pannier tank, complete with the noisiest vacuum pump that Swindon could produce; meanwhile 28 remained in original condition, still carrying the CMDP nameplates *Cleobury* until the early 1930s when she, too, was called to Swindon and re-appeared, looking very similar to the rebuilt 29. These two engines used to spend a week at a time at the sub-shed at Cleobury Town, changing over usually on Saturdays. When one of the pair was incapacitated, it was usually to borrow a '1901' Class Small Pannier from Worcester. However, two unusual locomotives were tried on the line during 1931: 803, ex-Llanelly and Mynydd Mawr Railway *Ravelston* along with 2197 *Pioneer*, ex Burry Port and Gwendraeth Valley Railway.

The push and pull trains round the triangle were normally in the hands of 4816, with 1254 as spare auto engine. No. 1254 was another ex-broad gauge convertible loco, having been stationed in Cornwall before the abolition in 1892. It



5ft 2in 4-4-0 3521 approaching Barmouth South, having just crossed the bridge from Morfa Mawddach (Barmouth Jc). This loco was one of the two sold to the Cambrian in 1921 to replace 82 and 95, destroyed in the Abermule disaster. No. 3557, the last of the class, was used on the Severn Valley line until its final withdrawal in May 1934. Photo: D. S. Barrie

'1076' class 0-6-0PT 1254 was the spare loco for the push and pull train round the Kidderminster-Bewdley-Hartlebury triangle. The loco ran on the Broad gauge from May 1887 and was the last of the class to be converted back to standard gauge in March 1893. It survived until Feb. 1937. Photo: Author's collection



had also been used as a spare engine for 4816's predecessor — 1442 — which was a 0-4-2 tank, originally saddle but converted to side tanks. For a few weeks in 1933, 5406 was tried on the auto services, but soon returned to the Westbury/Frome area. No. 4816 was replaced by 4845, and 1254's replacement was a brand new '64XX' Class — 6425. This caused considerable excitement locally: Kidderminster never received new engines direct from Swindon. After a few years, 6425 moved on to Landore, and was replaced by another brand new engine — 6430. Eventually, the auto services were replaced by the early GWR diesel railcars and the auto-fitted locos were transferred.

Branch freight traffic was comparatively heavy, due to the colliery at Highley. While part of it went South via Stourport to Worcester, a fair amount was sent to Kidderminster and re-marshalled. The usual engines for this traffic were Dean goods 0-6-0s but in earlier times, the Armstrong 'standard' goods had also been used and the last survivor of the Beyer-Peacock 0-6-0 goods — 363 — put in an appearance in the early 1930s. Worcester received one of the earliest Collett 0-6-0s — 2263 — when it was built and the allocation of these useful engines was gradually increased during the 1930s.

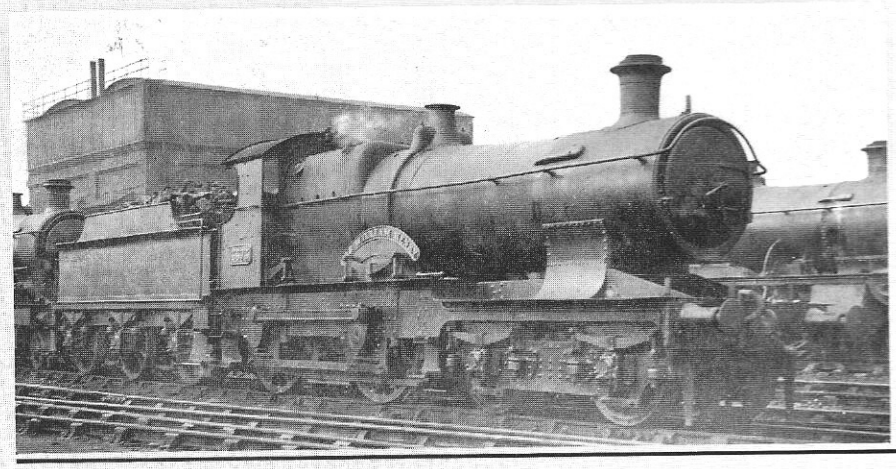
The Wooden Bridge spanned the yard at its narrowest part. To the South, there were six long sidings and a private siding for the Sand Company, which had narrow gauge tracks in its quarry and Simplex petrol locos on the 2 ft gauge lines. To the North, there was the Goods Shed, six long sidings arranged in pairs with tarred roadways between each pair, a grain store at the westernmost point of the yard, arranged alongside the headshunt, and about five coal sidings fed from the headshunt. There were two roads in the goods shed, but only one deck: it was necessary, therefore, for the wagons to be marshalled so that traffic for the second line of vans could be passed through the nearer vans standing alongside the deck. The sidings to the West of the goods shed were used for unloading vans of wool and jute; a petrol electric crane was provided for this purpose to load the flat horse-drawn drays which conveyed the raw materials to the carpet factories.

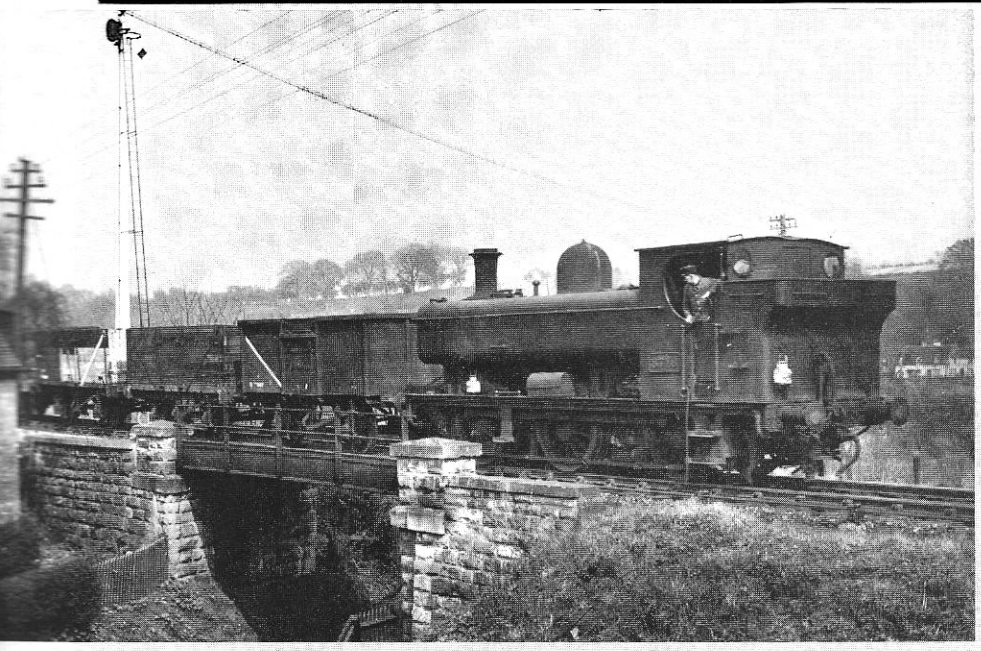
With all the activity in the various sections of the yard, a full time shunting engine was necessary. By 1930, three '87XX' Class pannier tanks had been allocated to KDR — 8718/27/31 — and one of these was always to be found at work at the Wooden Bridge. There was also one old pannier — 1741 — which appeared from time to time. As well as shunting the yard at Kidderminster, these locomotives shunted the yard and canal basin at Stourport and were also responsible for trips to the sugar beet factory at Foley Park. During the sugar beet season — roughly from early October to mid-January — when the factory operated continuously, an extra pannier was borrowed from Worcester; 7700 and 7750 were typical examples.

In times of motive power shortage, other classes would be pressed into service as yard shunters. One cold winter afternoon, 4596 was used as the shunter and had to take a very heavy load of coal to set back into the coal sidings; I can still recall the typical Swindon 'bark' as it struggled to lift its load away from the South sidings. One of the spare auto engines could also be pressed into service in emergency, but only the 0-6-0Ts were used in this way.

About 1932, the engine shed was moved from its original cramped site behind the up platform and a new one built in the cutting between Hoo Road and the Worcester road, alongside the Bewdley line. The actual shed building had been previously at Bassaleg and was a long corrugated iron structure. There was a sand siding on the South side of the cutting and the sand from here was sent to Swindon and used in the casting shop. The new shed enabled larger locomotives to be stationed at Kidderminster, and three '51XX' Class tanks — 5110/12/23 — were transferred for the Birmingham workings. No. 5123 was rebuilt in 1938 into 8101 and was returned to Kidderminster. The allocation of '45XX' Class 2-6-2Ts was also increased to five; these changed with others

Bulldog 4-4-0 3373 *Sir William Henry*. **The original intention was to name it** *Sir William Henry Wills* **but this name was too long for the nameplate. These locos were familiar sights all over the GWR in the 1930s.** Photo: Author's collection





0-6-0PT 8718 entering Hampton Loade on a Buildwas-Kidderminster freight on 16th April 1954. This engine was the best of the early panniers at Kidderminster and survived beyond the end of steam on the Western Region by being transferred, first to Stourbridge and then to Croes Newydd, being withdrawn from there in July 1966. Photo: W. A. Camwell

of the same class — mainly from the other sheds in the Worcester Division — and also appeared on the Birmingham workings from time to time.

Things changed radically in 1936, when the GWR announced two new schemes for the Kidderminster area and Up and Down goods loops were put in South of the Wooden Bridge. A new, larger signal box, of all wood construction with an internal staircase, was provided, about 150 yd south of the previous box, so that it was no longer possible to hear the block bells, while a down starting signal, carrying an inner distant for Kidderminster Station box, made its appearance within two yards of the bridge itself; this was on a large reversed wooden bracket and was braced to the actual bridge. At Stourport, a new line, about half a mile in length on a continuous embankment, was built to give access to the power station. This involved building three high girder bridges over the Hartlebury road, the River Stour, and the Worcester road respectively. At the same time, the signalling at Stourport was concentrated in the North box and the South box removed.

As a result of these alterations, traffic working in the area was changed. Instead of coal for Stourport Power Station being brought down the Staffordshire and Worcestershire Canal, unloaded in the basin and transported to the station by a narrow gauge line with battery locos, it now came along the main line from Stourbridge Junction to Hartlebury. Here, the train reversed and proceeded to Stourport before another reverse into the exchange sidings. By using the down side loop at Kidderminster, trains from the Worcester direction could be run directly into the yard and this move was used extensively when trains of raw sugar were sent from Newport Docks for refining at Foley Park. These trains brought a number of rare locomotives to Kidderminster as it was unusual to see Ebbw Junction engines — and locomotives from other South Wales sheds were also borrowed for these workings.

As the 1930s drew to a close, motive power tended to become more standardised, but one new class did become quite common: several of the 7220-7239 batch of 2-8-2Ts were allocated to Pontypool Road and Oxley and took over some of the workings on the through goods workings. They retained the traditional GWR goods tank's thirst, however, and I have vivid memories of 7226, blowing off violently, stopping urgently to fill up at the water column under the down platform canopy — a most unusual occurrence.

Within three months of the outbreak of war, the variety was greater than ever. The Dean Goods were withdrawn for overseas service, and were replaced by ex-Midland Class 2F and ex-North Eastern Class J25 0-6-0s; in addition, certain obsolete locomotives were re-instated. But the full story of Kidderminster in wartime must be written by someone else, as I was investigating the delights of Italian Colonial Mallet Compounds in Eritrea and Pacifics in the Sudan at the time!

Happily, steam still moves regularly under the Wooden Bridge. True, the scene has been completely ruined by a high security fence which runs the whole length of Kidderminster yard, but at least the sounds and smells of GWR locomotives can be savoured from that location.

2-6-2T 5154 entering Highley on the 1.45 pm from Shrewsbury to Kidderminster. The severe weight restrictions on the Severn Valley line had been relaxed during the War and the line had been upgraded from a Yellow to a Blue route. Photo: W. A. Camwell

The Cleobury Mortimer and Ditton Priors Light Railway lost its passenger service in 1938. In later years, only one loco was required for the CM&DP line. No. 28 was transferred to Newport, and 29 became the spare loco to a 2021 class loco — normally 2144 — fitted with a spark arresting chimney. By now very much 'Swindonised' 29 was usually to be found doing a little light shunting as shed pilot or, more likely, dozing in front of the coal stage at Kidderminster. Photo: Author's collection

L M
Han
Adver

"Any publicity is good publicity" is an oft quoted cliché, and apart from chalked notices at stations, handbills were one of the cheapest yet most effective avenues used by the railway companies, and the LMS in particular. All the pre-group companies used this form of publicity to create public awareness that there were to be special trains to a selection of events. It was thus not a new form introduced by the LMS, but they made full use of it.

They were generally on poor quality paper, with the vast majority measuring 6¼in wide and 10in deep, with some extended to 12in. There was a broadly standard range of handbills for Excursions to the seaside, to football matches, or to town fairs, and those covering special holiday trains were often of four or more printed sides, in the form of a pamphlet. Where outside events, such as the Hendon Air Display, or British Industries Fair, were advertised by handbills or pamphlets, the LMS heading was rarely used, and the event with a sketch, sometimes in colour, usually took the front page. Travel particulars by LMS trains were either on the reverse of a single sheet, or inside a folded pamphlet and a wide range of coloured papers and printing inks was used to attract the eye of the traveller.

The use of McCorquodale's and

1

L. M. & S. R.
EASTER HOLIDAYS.
On THURSDAY, MARCH 29th,
COOK'S EXCURSION
FOR 1 TO 15 DAYS TO
CHANNEL ISLANDS
(Via Cheltenham and M. & S. W. Railway)
WEEK-END TICKETS
CONDITIONS OF ISSUE OF TICKETS
ARTHUR WATSON, General Manager.

2

No. 16760.
L M S
LONDON MIDLAND AND SCOTTISH RAILWAY.
RIPON RACES.
On MONDAY and TUESDAY,
AUGUST 3rd and 4th, 1925,
Day Excursion Tickets will be issued to
RIPON
L. & N. E.
via HOLBECK
Passengers are requested to obtain their Tickets in Advance.
H. G. BURGESS, General Manager.

1
March 1923 until later in the year, one of the first heading styles.
Author's collection

2
This style was in use from late 1923 until 1926, in two sizes. The change took place in mid 1925 when the 5in width heading was reduced to a 4½in width.
Author's collection

3
By January 1927 this block style was in use.
Author's collection

4
By August 1927 the 'LMS' was changed, and apart from some bills having only the LMS letters in late 1927, without the company's full title, this style was broadly unchanged until late 1931.
Author's collection

5
The first of several changes in style in 1932/3 was this variation, of May 1932.
Author's collection

6
Soon afterwards this style was used, followed by

7/8
Note the return to letters only, and the star or asterisk above the 'M'.
Author's collection

9
1934 saw the introduction of the elongated bean shape, which remained in use throughout the war years, not so much on excursions which of course did not run in those days, but as headings to special notices as in 10.
Author's collection

10
A wartime notice.
Author's collection

11
A non-standard example.
Author's collection

3

L M S
LONDON MIDLAND AND SCOTTISH RAILWAY
THIRD CLASS
WEEKLY SEASON TICKETS
AVAILABLE FOR AN
UNLIMITED NUMBER OF JOURNEYS
ARE ISSUED TO AND FROM
LICHFIELD (City)
AND
LICHFIELD (Trent Valley)
AND
GET ONE NEXT WEEK.
REDUCE YOUR TRAVEL COSTS.
H. G. BURGESS, General Manager.

4

Cancelling Bill B 69.
B 1883
L M S
LONDON MIDLAND AND SCOTTISH RAILWAY.
Early Closing Half-Day Trips
On WEDNESDAY, SEPTEMBER 28th, 1927
AND
Every Wednesday and Saturday
UNTIL FURTHER NOTICE
COOK'S
CHEAP TICKETS
WILL BE ISSUED FROM
BIRMINGHAM
(NEW STREET)
and SALTLEY
AS UNDER:—
The Tickets will be available for return by any train on the day of issue only.
FOR CONDITIONS, ETC., SEE OVER.

5

L. 374/R
L M S
LONDON MIDLAND AND SCOTTISH RAILWAY
THE
National Temperance Fête—Crystal Palace
SATURDAY, June 18th, 1932
Cook's DAY EXCURSION to
CRYSTAL PALACE
PLEASE RETAIN THIS BILL FOR REFERENCE
C. H. BYROM, Chief General Superintendent.

Handbilling

by **Nelson Twells**

Bemrose for printing LMS material is well known, both for handbill and poster printing, and also for official holiday guides and other requirements, but there was also a large number of local printing firms in all parts of the LMS territory who received orders for handbill printing, particularly for localised excursions such as football match specials. Many of the printing works employed a large number of people and with the constant requirement for handbills, many firms depended to a great extent on the railway company.

Conditions for travelling on excursion trains and other specials were always printed on handbills, and an interesting point is that on an outward excursion journey, passengers were only permitted to take small hand luggage and luncheon baskets, intended for the passenger's use during the day, whilst for the return journey, each could take with them free of charge, goods etc. not exceeding 60 lbs in weight for their own use.

A series of code references appeared in the top right-hand corner, eg D1132/R or B1883. Handbills carrying these references all appear to refer to either Derby or Birmingham, with 'M' appearing on those for the Manchester area and 'L' for London. The 'R' suffix appears only to have been used on single-day excursion notices, possibly as an indication that after the date for which they were applicable, they should be removed. If any reader can throw any more light on the reference system, the author would appreciate hearing from them. 'B' references were also used in Scotland, most probably to indicate a Buchanan Street connection.

Other codes were used in the bottom left corner — eg 15,000 H, 100 P — to indicate the number of handbills and posters printed. Where only handbills were printed then either the print run number appeared, or the number and H. Other references generally included the date of printing, either the full date, eg 8/3/47 or month and date, viz 3/47.

With the introduction of the E.R.O. reference system (Executive Record Office references), handbills were given the ERO 53302 for the standard issues, with others bearing ERO 53360, ERO 53300. The earliest handbill in my collection with ERO 53360 is February 1933, and with ERO 53302, in April 1933. These references then continued in use throughout the rest of the LMS period and into the British Railways period. The styles of heading are shown in the accompanying illustrations, with approximate dates when used.

11

LMS

Easter Holidays, 1933.

PROGRAMME OF ADDITIONAL THROUGH TRAINS

EASTER HOLIDAY RETURN TICKETS

AT A PENNY A MILE (3rd CLASS)

Fractions of 3d charged as 3d.
Minimum Fares 4/- First Class, 2/6 Third Class.

BY ANY TRAIN
IN EITHER DIRECTION—NO EXCEPTIONS

OUTWARD—	RETURN—
WEDNESDAY, APRIL 12th THURSDAY, APRIL 13th FRIDAY, APRIL 14th SATURDAY, APRIL 15th SUNDAY, APRIL 16th MONDAY, APRIL 17th TUESDAY, APRIL 18th	Any day up to and including Sunday, April 30th, 1933.

To Any Station in ENGLAND, WALES & SCOTLAND
(Except to destinations on the SOUTHERN RAILWAY COMPANY'S System)

For particulars of HOLIDAY RETURN TICKETS to IRELAND, CHANNEL ISLANDS, and to STATIONS ON THE SOUTHERN RAILWAY see page 2.

10

PLEASE RETAIN THIS HANDBILL FOR REFERENCE

LMS

Closing of WICK AND LYBSTER BRANCH

The London Midland and Scottish Railway Company intimate that the Wick and Lybster Branch Railway will be closed for the conveyance of traffic by rail after the close of work on Saturday, 1st April, 1944.

On and from Monday, 3rd April, passengers will not be booked for rail conveyance to or from

THRUMSTER
WELSH'S CROSSING
ULBSTER
MID CLYTH
ROSTER ROAD
OCCUMSTER
PARKSIDE
LYBSTER

There is a connection, but service serving the area, to which passengers are referred.

Passenger-train parcels, newspapers, and perishable passenger-train traffic, such as fish, etc., will be conveyed between Wick and the stations on the Branch by road motor vehicle working from and to Wick Station.

Freight Train traffic will also be conveyed between Wick and the Branch Line stations in either direction by road motor vehicle working from and to Wick Station.

The existing arrangements at Lybster regarding the collection and delivery of traffic, that is between the station and the traders' premises, will continue.

MALCOLM SPEIR,
Chief Officer for Scotland.

E.R.O. 53301

9

PLEASE RETAIN THIS BILL FOR REFERENCE

D 932

LMS

AUGUST HOLIDAYS, 1934

On MONDAY, AUGUST 6th

Cook's SPECIAL DAY EXCURSIONS to

TAMWORTH BURTON and DERBY

WILL RUN AS UNDER:

FROM	TIMES OF STARTING.	RETURN FARES (Third Class). To Tamworth.	To Burton.	To Derby.
BIRMINGHAM (New St.)	A.M. 7 55	3 6	3 6	4 0
SALTLEY	8 0	2 0		
	A.M. 9 25			
	9 30			

CHILDREN under three years of age, free; three years and under fourteen, half-fares.

RETURN ARRANGEMENTS.

Passengers return same day by any ordinary train or specials from DERBY at 7.45 p.m. and 10.0 night, BURTON-ON-TRENT 8.2 p.m. and 10.25 night, TAMWORTH 8.32 p.m. and 12.45 night, due BIRMINGHAM 8.57 p.m. and 1.20 night.

SPECIAL NOTE.

OMNIBUS ARRANGEMENTS—AUGUST HOLIDAY—BIRMINGHAM.

FOR FULL PARTICULARS SEE BILLS: ANNOUNCEMENTS, &c.

FOR NOTES, ETC., SEE OVER.

6

LMS

LONDON, MIDLAND AND SCOTTISH RAILWAY

D 1132/R

FIRST LEAGUE FOOTBALL MATCH

DERBY COUNTY v. BIRMINGHAM

At DERBY. Kick-off 3.15 p.m.

On Saturday, Sept. 17th, 1932

Cook's Half-Day Excursion

TO

DERBY

WILL RUN AS UNDER:—

FROM	TIMES OF DEPARTURE.	RETURN FARE. Third Class.
BIRMINGHAM (New Street)	12.55 p.m.	3/-
SALTLEY	1 0 "	
DERBY	2 5 p.m.	

CHILDREN under three years of age, free; three years and under fourteen, half-fares.

HOW TO REACH THE FOOTBALL GROUND.—
ELECTRIC TRAMS RUN FROM DERBY STATION.

SPECIAL NOTICE. In the event of the Match being rescinded or postponed, the special arrangements will be cancelled, and the Excursion Tickets will not be issued, otherwise the Company cannot accept any responsibility in the event of unavoidable delay or failure to carry out the special arrangements.

Passengers return on day of issue only from DERBY at 7.12 p.m., due BIRMINGHAM (New St.) at 8.20 p.m.

RETURN ARRANGEMENTS.

PLEASE RETAIN THIS BILL FOR REFERENCE.

FOR CONDITIONS, NOTES, ETC., SEE OTHER SIDE.

7

LMS

LONDON, MIDLAND & SCOTTISH RAILWAY

D 293

EASTER HOLIDAYS, 1933

SUMMARY OF ATTRACTIVE Day and Half-Day Excursions FROM

BIRMINGHAM (New Street)

APRIL 14th, 15th, 16th, 17th and 18th

TO	Times of Departure from New Street.	Return Fare. Third Class.	Returning same day at
LONDON (Euston)	10 0 a.m.	6 6	7 10 p.m.
	10 40 a.m.	6 6	7 10 p.m.
	10 45 "	6 6	8 25 p.m.
	10 50 "	6 6	8 25 p.m.
LIVERPOOL (Lime St.)	10 50 "	6 6	8 25 p.m.
NEW BRIGHTON	10 50 "	6 6	8 25 p.m.
TAMWORTH (N.L.)	10 50 "	6 6	8 25 p.m.
BURTON-ON-TRENT	10 50 "	6 6	8 25 p.m.
DERBY	10 50 "	6 6	8 25 p.m.
SHEFFIELD	10 50 "	6 6	8 25 p.m.
SHEFFIELD (Mid.)	10 50 "	6 6	8 25 p.m.
MANCHESTER	10 50 "	6 6	8 25 p.m.
LEEDS (New)	10 50 "	6 6	8 25 p.m.
STAFFORD	10 50 "	6 6	8 25 p.m.
STOKE-ON-TRENT	10 50 "	6 6	8 25 p.m.
NEWCASTLE (L. &L.)	11 20 "	6 6	8 25 p.m.
	11 55 "	6 6	8 25 p.m.
KIDDERMINSTER (L. &L.)	11 55 "	6 6	8 25 p.m.

GOOD FRIDAY, April 14th

SATURDAY, April 15th

LONDON (Euston)	6 10 a.m.	12 6	12.45 night
SHEFFIELD	11 15 "	6 6	

In connection with Sct. Excursion to Aston Villa Ground.

8

LMS

E 474/R

SUNDAY, MAY 7th, 1933

SPECIAL CORRIDOR HALF-DAY EXCURSION to

YORK, DARLINGTON DURHAM and NEWCASTLE

FROM	Times of Departure.	RETURN FARES—Third Class. York.	Darlington.	Durham.	Newcastle.
PRESTON	A.M.				
BLACKPOOL	12 0	4 6	4 6	5 6	5 6
PRESTON	12 24	4 6	4 6	5 6	5 6
ACCRINGTON	12 34	4 6	4 6	5 6	5 6
BOLTON	12 42	4 6	4 6	5 6	5 6
BOLTON (Trinity St.)	12 45	4 6	4 6	5 6	5 6
MANCHESTER (Exchange)	12 55	4 6	4 6	5 6	5 6
TODMORDEN (Burnfield Rd.)	12 42	4 6	4 6	5 6	5 6
	12 55	4 6	4 6	5 6	5 6
	13 10	4 6	4 6	5 6	5 6
	13 18	4 6	4 6	5 6	5 6
YORK	LEEDS	RETURN			
DARLINGTON	A.M.				
DURHAM	7 45	3 6			
NEWCASTLE	7 45	3 6			
	7 58	3 6			

CHILDREN under three years of age, free; three years and under fourteen, half-fares.

LUGGAGE ALLOWANCE.

CONDITIONS OF ISSUE OF EXCURSION AND OTHER REDUCED FARE TICKETS.

TICKETS AND INFORMATION CAN BE OBTAINED IN ADVANCE AT THE COMPANY'S STATIONS.

ACCOMMODATION—COMPANY'S STATIONS.

ASHTON DAVIES, Chief Commercial Manager.

E 474/R

YESTERDAY'S OBSERVER

SEPTEMBER 1960

Five years into modernisation, diesels active on all regions but still 86% steam in the locomotive fleet — and signs of some official interest in the railway heritage. From the RCTS journal 'Railway Observer'.

LONDON MIDLAND REGION

MIDLAND DIVISION. From observations, the "Midland Pullman" has given exemplary performances so far. A ceaseless flow of extras on Bank Holiday Saturday was handled mainly by a grimy selection of Cl.5's, Jubilees and Patriots 45508/9/11/32, and in common with other Saturdays, all was handled commendably. A significant feature was the ability of the local diesel services to fit in with the additional fast traffic. Diesel locomotives, however, were notably absent compared with last year. The three Crewe-built Sulzers on loan are in immaculate condition and have been engaged on the Moorgate services and on local parcels. B1's continue to appear and 61104 limped up to St. Pancras on 23rd July. On 13th August, 45478 (63A) appeared on a down Bradford relief; as this engine spent most of its earlier working life at Inverness, this may well be its first-ever visit so far south.

The winter timetable will see the easing of schedules of practically all expresses in and out of St. Pancras. All Leeds trains will leave five minutes earlier than hitherto and the Sunday service will be entirely recast.

WESTERN REGION

9000 CLASS. The remaining "9000" 4-4-0 on the Cambrian section, 9017, was in full service during week commencing 8th August. From the Monday to the Wednesday it made a daily return trip from Machynlleth to Pwllheli. On Thursday it had a rest day on shed in preparation for working the "Cambrian Coast Express" on Friday, 12th August. The train engine was 7818 *Granville Manor* and 9017 came on as pilot at Machynlleth and worked right through to Shrewsbury, returning ahead of the Manor on the down "C.C.E." from Shrewsbury to Aberystwyth. The conditional stop at Llanbrynmair on the up run was made, and the two engines made a superb climb thence up the 1 in 50 to Talerddig summit.

The following day, 13th August, 9017 piloted the 9.45 a.m. Pwllheli-Paddington forward from Machynlleth. The reason for using this engine on such illustrious turns is that it is the only small engine at Machynlleth with a front bogie, and can therefore assist the Manors as pilot, instead of having to be coupled inside as is the case with engines having only a pony-truck.

SOUTHERN REGION

"TERRIER" tank No. 82 *Boxhill* has been undergoing overhaul in the diesel repair shop prior to dispatch to the Clapham Museum. 80037 is among a number of engines fitted with AWS gear. Its batteries are contained in the coal bunker for which a door has been fitted on the left hand side of the rear plate.

To date, plans for the preservation of an L class 4-4-0 and a Continental carriage have not passed the discussion stage, but Ashford Works would be very pleased to undertake the work, which may possibly turn the tables in favour of the idea. This would have to be done in the next year or so as the works are scheduled to close at the end of 1962. The Carriage & Wagon Works, however, are more fortunate as they have been granted a longer lease of life owing to their first rate workmanship and most competitive costing. Members will be pleased to know that 737's paintwork was only slightly damaged during its journey to Clapham Museum, and this has now been put right by the Ashford paint shop staff. Rumour has it that the final cost was as low as £700.

EASTERN REGION

D5639, DELIVERED to Finsbury Park in late August, is the first of a batch of fifteen. Amongst the locomotives which they will replace are ten "Baby Deltics" (D5900-9) which are destined for Sheffield for colliery work.

On 20th and 21st July, "Deltic" with twelve standard vehicles and dynamometer car worked high speed brake trails between King's Cross and Grantham. Brake tests from the highest permissible speed were made at Hitchin South, Tempsford, Holme and Grantham South on the down, and at Greatford, Huntingdon and Everton on the up runs. On arrival at Grantham, the whole train was turned via Allington Jct., Barkston East and South Jcts., with an assisting engine in the rear between Allington and Barkston East.

On Thursday, 21st July, Brush diesels D5630/4/5 were delivered from Loughborough to Doncaster via Chesterfield Midland, Rotherham Mas., Mexborough instead of via the normal route. Doncaster diesel men and a Canklow Pilotman worked throughout. This was presumably to avoid having to split the diesels whilst going over the Newark Dyke bridge, as not more than two engines coupled are allowed. On Thursday, 4th August, no Brush diesels were delivered as the works were on holiday, but deliveries were resumed with D5638/9 on 11th August.

SCOTTISH REGION

GLASGOW AREA. The electric services on the north side of the river are now expected to start in October with a 90% average increase in the number of trains. Only the Parkhead North Junction-Airdrie and High Street-Bridgeton Central sections remain to be energised. On 3rd July Sunday services to Helensburgh and Balloch were diverted via Maryhill, with a stop at Bellgrove for Bridgeton and a connecting bus service from Partick Hill to Westerton, for the bringing into use of the new Hyndland signal box the following day.

BRITISH RAILWAYS

	L.M.R.	W.R.	S.R.	E.R.	N.E.R.	Sc.R.	Total
LOCOMOTIVES							
Steam	4246	3131	1152	1899	1739	1721	13888
Diesel	431	328	152	629	242	347	2129
Electric	74	—	24	—	2	—	100
Total	4751	3459	1328	2528	1983	2068	16117
MULTIPLE UNITS							
Diesel	1092	702	212	385	708	431	3530
Electric	857	—	4047	942	167	128	6141
Total	1949	702	4259	1327	875	559	9671

Note.— Excludes locomotives or units stores or awaiting repair.

Book Reviews

OUR RATINGS

★★★★★ Excellent
★★★★ Very good
★★★ Good
★★ Fair
★ Poor

ATLANTIC COAST EXPRESS

By Stephen Austin, Paperback, 112pp, £6.95;

RAIL CENTRES: LEEDS/BRADFORD

By Stephen R. Batty, Hardback, 160pp, £11.95, Ian Allan Ltd (both)

There are so many indifferent railway books emerging these days from so many publishers that it is very nice to be able to welcome two new titles from Ian Allan, doyen of them all, which manage to break significant new ground.

The 'ACE' was something of a special train anyway, but Stephen Austin's refreshingly different and detailed treatment gives it a whole new dimension, treating the train itself as merely the outward manifestation of a much more complex sub-structure. We see it from the driver's and guard's standpoint, from the signalling and operating viewpoint and also from the social and environmental angle. Well illustrated and well written, the book gives a more rounded view of the totality of railway operation in steam days than most — even down to the best description this reviewer has ever seen of the technical niceties of the operation of the buckeye coupler! Excellent value at the price.

★★★★★

By complete contrast, Stephen Batty endeavours to come to grips with one of the most complicated 'cats' cradles' of interlocking pre-group company lines that could ever be seen in this country. As a resident of the area, I know how hard a task he has set himself and that he manages to bring much order out of incipient chaos is wholly to his credit. If there is a criticism it is that too many BR period pictures have been used — there must surely be plenty of earlier examples available to show the great variety which was once seen. But no matter; as an introduction to a complicated story it well serves its purpose and given the price of books these days, it is pretty good value for money.

★★★★ *DJ*

LOW GATES

Northallerton grew to be a railway junction of importance from early days where the Leeds Northern Railway (later the Leeds-Harrogate-Ripon-Northallerton line of the NER) met the Great North of England Railway (later part of the East Coast main line). By the 1950s, the well-used signal box controlling the connecting spur between the two routes was in need of replacement and this BR-built structure took its place. Though the building was starkly modern in outline, the equipment (visible through the window) was thoroughly traditional. Photo: Chris Davies

HORWICH 'MOGUL' 42782

Though the enthusiasts always called them 'Crabs' because of the rather unusual layout of their outside motion, they were always Horwich 'Moguls' to genuine railwaymen. This name sprang from the fact that the major part of the design was by George Hughes at Horwich during the troubled early 1920s when little seemed to go right in LMS locomotive affairs. These splendid engines were a noteworthy exception and were an early example of the truly 'Mixed Traffic' concept which later became commonplace both on the LMS and elsewhere. They lasted almost to the end of steam, hardly changed from their original form and this fine study at Bescot on 4th May 1962 shows their final BR guise. Photo: W. Potter

Readers' Forum

THE HIDDEN DANGER

As a young trainspotter in the 1950s I, along with many others, made the mistake of taking the everyday life of railways for granted; after all, it had been part and parcel of the British way of life for so long. Surely, we thought, no one would dream of making major changes. How wrong we were and how much I regret not taking photographs of locos, rolling stock, stations, etc, and learning more about routine operations.

The arrival of BACKTRACK therefore seemed to be just what I was looking for, but after ten issues I have one personal observation to offer. The photographs are excellent and the articles are interesting but I feel that the general level of presentation presupposes that the reader has a large vocabulary of railway terms at his or her command.

I would hazard to suggest that you may in time come up against the law of diminishing returns for as less and less of the population will have a personal experience of steam days the enthusiasm of another generation will have to be kindled in order to survive. But will it be kindled if the unexplained 'secret language' of ex-railwaymen is used so extensively? Even basic terms like up and down lines, home and distant signals, siphons, bolsters, Bulleids, etc, are alien to many 'would-be' rail fans.

In order that my comments may appear constructive, I would like to make one plea. What about a 'Glossary Page' where basic railway words and terms could be explained simply and briefly? Such a page in each issue could become the key which opens the door for more and more of us. That's always assuming, of course, that we would be welcome!

J. G. Griffiths, Gronant, Clwyd

WEED KILLING TRAINS

I was very interested to read Mr Peter Erwood's letter, on page 46 of your Spring 1989 issue, with its reference to tank wagons used for track weedkiller solutions. As he says, the Southern Railway usually used old locomotive tenders, and one such train, converted from Wainwright tenders, was often kept at Blackheath, usually in the now disused bay platform on the up side.

More interesting, however, was the other weedkilling train which was also sometimes stabled at the same location. This was a train of about six tank wagons, painted black and lettered "Chipman Chemical Co.", who were presumably the manufacturers of the weedkilling solution. Both these trains were often to be seen in the 1950s, and I have often regretted the fact that I never photographed either of them.

Frank Goudie, Eltham, London

PORT CARLISLE BRANCH

Regarding the interesting article on Port Carlisle there are one or two interesting items about its junction at Drumburgh.

A gazetteer based on the 1881 census shows it on the map but gives no population and with the closing of the branch the significance of Drumburgh as a station would seem to be gone.

Despite this, as late as 1946 it was the only station on the Silloth line to have separate arrival and departure times (a difference of one minute).

It was, however, the only station on the line not to survive to the end and closed in 1955, a good nine years before the rest of the line.

J. F. Burrell, Bristol

GREAT EASTERN CARRIAGES

Some of the references made to carriage stock in the recent BACKTRACK article entitled 'Great Eastern in the 1930s (Vol 3, No. 1) require some clarification.

Although the GER did widen many of its carriages this applied only to the four-wheel suburban stock. This conversion programme, carried out during 1902 and 1903, was prompted by the successful introduction in 1899 of the 9ft wide six a side carriages, distinguished from all previous vehicles by the use of semi-circular tops to the doors.

The widened stock, originally built between 1876 and 1897, was withdrawn over the period 1912 to 1929 and thus, contrary to the myth created by Cecil J. Allen, their life was not further prolonged by conversion to bogie stock. However, some of the original six a side stock was so converted, a programme commencing in 1914 to form eight-coach sets from 16 four wheelers by mounting pairs of bodies onto new underframes. In all 13 sets were constructed by 1923 and all were used on the Ilford services until 1935. The last of the six a side four-wheelers found employment on the North Woolwich and Victoria Park services until withdrawal in 1936.

In regard to branch line stock the influx of former NER carriages occurred between 1935 and 1938 and until then the trains were usually composed of a mixture of GE six wheel and bogie stock.

J. Watling, Chingford

PRESERVATION AND ACCURATE HISTORY

I appreciate your standpoint on preservation but I think there has to be some meeting point because in the future those of us who actually remember steam in action in Britain as a workaday occurrence will be getting thin on the ground. Preservationists tend to be practical people more concerned with getting things done than concerned with historical accuracy. Thus they rely on those doing the research or contributing records for the less practical aspects. In the middle are a number of specialist groups which have been set up to record the historical aspects.

My suggestion is therefore that your magazine should encourage such groups by offering a platform for publication of their research, especially information on colour schemes and not just locos and coaches, but buildings, etc.

If this information can be made available it is more likely to be taken up by the preservationists who will then present a more historically accurate picture to their many visitors. In this way we can perhaps ensure a better future for an accurate portrayal of our railway heritage.

P. J. Howell, Corstorphine

DEVIZES — OR DEVICES?

With tongue appropriately in cheek(!), may I compliment your move towards a Competitions-page, in BACKTRACK, with the 'Spot-the-Token' picture on page 116 of Vol. 3, No. 3 (July/August 1989) issue; however, there are no details of stakes, or closing-date! Even so, my copy of the photograph of Messrs. Bert Clack and Harry Groves is *plastered* with the tiniest of crosses in the hope of finding the elusive centre of the token, and I now look forward to publication of the 'answer'-photo to see how I did!!

Mind you, I venture to suggest that there is, in fact, *no* competition, but that the picture in question (centre of page) carried the wrong caption: should it not, perhaps, read:-

"...And I tell you it *is* raining, 'Arry — know what I mean?"!!??

All in jest, I assure you — and let not that detract from a seriously terrific publication. Power to your print!

Maurice J. Coville, Stewarton, Ayrshire

Gorgeous! Thank heaven our readers retain a sense of humour — Maurice, you have given us ideas! Ed.

A PLEA FOR HELP

My name is Sarah Freeman and I am in my lower sixth year doing a history 'A' level. This exam includes an extended essay on an area of local studies which interests me. For my personal study I hope to answer the question: "How did the coming of the railways affect the lives of the people of Watford?"

The aim of this study is to explore the opposition to the railways from landowners plus the employment factor, relocation of the poor on railroad land, destruction of the landscape and objections to trains on Sundays. The effects of increased facilities for travel and recreation and other social changes from 1830 to 1880 are also relevant.

I would be very grateful if any readers could help me, especially with any photos, diaries, newspaper cuttings, books or magazines. Thank you.

Sarah Freeman, Bushey Heath, Herts

We are always more than happy to encourage the younger generation in their pursuit of *real* railway history so answers please via our office; we will forward them to Sarah. Ed.

'CLAN' PACIFIC WORKINGS

On p. 45 of the Spring 1989 issue, you stated that 'Clan' 4-6-2s only operated on the Scottish Region. In fact, they were quite often seen "South of the Border" and I offer the following cases of my own observations in England:-

29/8/64 72005 at Chester
24/4/66 72006 on Stourton Shed
24/3/63 72008 on Tyseley Shed
21/9/63 72007 at Blackpool
23/4/64 72007 on RCTS Special Lancaster
23/8/55 72000 on Bank Hall Shed
24/8/55 72002 on Newton Heath Shed
24/12/58 72006 on 1512 Sheffield-B'ham-RTN
17/4/62 72005 on Inverness-Sutton Coldfield sleeper
5/7/60 72009 on 2035 Stirling-Sutton Coldfield sleeper
19/7/60 72006 on 0740 Derby-Bradford
21/7/60 72006 on 0740 Derby-Bradford
8/7/60 72005 on 2045 Bradford-Paignton as far as Bristol
19/4/61 72003 on Scotland-Wolverhampton excursion
20/6/61 72000 1705 on Blackpool-Euston (as far as Rugby)
28/10/61 72009 on Water Orton-Derby freight
24/11/61 72006 on Water Orton-Normanton fitted freight
20/4/62 72001 on Barrow-Millom oil train
22/9/62 72004 on excursion to Morecambe
23/9/62 72009 on excursion to Blackpool

P. Smith, Llandrindod Wells

BLETCHLEY &c

May I say how much I enjoyed "Bletchley Recalled" in your July-August 1989 issue.

However, it is not quite correct to suggest that the last visit of a "Cauliflower" to the Banbury branch was in 1942. As late as November 1945, Bletchley had an allocation of four of these veterans, (28350/28550/28555/28601), and I was able to photograph 28550 at Banbury on 2nd August 1946 ("Prince of Wales" 4-6-0 25752 was incidentally also present at the same time). As 28350 was not transferred to Crewe until July 1947, 28550 to Springs Branch in November 1947; 28555 to Workington in July 1948, it is almost certain that these locos would have been seen on the Banbury branch after August 1946, possibly for another eighteen months or so — unless someone else knows differently!

F. A. Blencowe, Churchdown, Gloucester

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By arrangement with the Railway Correspondence & Travel Society: edited extracts from back issues of the respected RCTS journal 'Railway Observer'. First hand lineside observations and railway statistics 1935-1975, a wealth of minutiae in danger of becoming lost.

COLOUR FILES

Large, clear colour pictures of selected historic stations and locomotives, building to a unique record.

TECHNICAL

The 'nuts and bolts' of railway operation and design: locomotive mechanics, signalling, driving, firing, servicing, etc: detailed, technical but never dull.

PHOTOFILE

Carefully selected black and white views, extensively captioned and drawn primarily from unpublished material.

FRONT COVER: This fine action shot of BR standard Class 5 4-6-0 73030 'on the rollers' at the Rugby Testing Station was taken in 1953 during tests to evaluate coal (see article page 149). Photo: J. G. Click collection; NRM.
INSET: Former LSWR Adams 'Radial' 4-4-2T 30582 in 1959. In 1913 it was the first of its kind to appear on the Lyme Regis Branch. Photo: K. R. Pirt/K. R. Photographics

REAR COVER: Some of the famous Gresley LNER A4 pacifics performed their final duties, rather ironically, on the 'three-hour' expresses of the former LMS main line between Glasgow and Aberdeen. They were kept in splendid condition as can be seen in this view of 60024 *Kingfisher,* **seen leaving Gleneagles in the Summer of 1966 with the 1.30 pm Aberdeen-Glasgow train.** Photo: Paul Riley

Atlantic